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Abstract

Reproductive health is a state where each individual of the reproductive age cohort can make informed choices based on their reproductive health needs and reach a state of bliss and well-being. Informed choices are a possibility only if there is awareness regarding options of healthcare available. Awareness further indicates capacity to measure the worth of the options available in hand. One major aspect of measuring this worth is dominated by the financial aspect of awareness. In other words, expenditures incurred on reproductive health should be an information for all stakeholders to understand, analyse and arrive at informed choices. It has been unanimously felt that this domain of health needs more sustained efforts in terms of research into the specific components of expenditures. One such instrument which has been suggested is to construct a system of reproductive health accounts which can track the fund movements among the different actors operating in the sector of reproductive health. Reproductive health accounts at local and contextual levels, has to conform to the existing national framework of health accounting so as to lend itself to inter and intra-regional comparisons. It consists of a group of matrices which capture origin of funds from financial sources to the destination where funds will ultimately be used on health functions, based on accounting boundaries of space, activity and time.This study attempted to construct a reproductive health accountat sub-district levels in the district of Ramanagara in the state of Karnataka, India. Two sub-districts Ramanagara and Chennapatna were chosen for this purpose based on their reproductive health indicators. A household survey was conducted to collect data. The data included reproductive health related information, expenditures incurred and type of finance used for coverage. The findings indicate very high percentage of contribution coming from households through out-of-pocket expenditures and heavy expenditures being incurred at tertiary level providers, radiology and pharmacy levels. Contribution of public funds were found to be lesser than national averages. To triangulate the data collected, there were follow-up studies which were undertaken to verify the information and understand the concepts further. These studies included multiple surveys involving individuals, public facilities, private enterprises, private providers, NGOs and patient satisfaction. All these studies validated the data that was collected from the households in the first stage which was used in the main study design in an effort towards constructing the reproductive health account at sub-district level.

Keywords

Reproductive Health, Health Expenditures, Out-of-Pocket Expenditures, Health Accounting Matrices, Primary Health Centres, Public Health Expenditures, Patient Satisfaction

1.Introduction

The purpose of System of Health Accounts (SHA), 2011 updated version as a joint effort of World Health Organization (WHO), Organization for Economic Cooperation and Development (OECD) and Eurostat, is to describe the health care system from the perspective of expenditure both for national and international reasons. It covers tri-axial health care dimensions consumption, provision and financing involving three actors namely Financial agents, Providers and Functions. National Health Accounts (NHA) has a fourth dimension of Financing Sources as well (training Manual NHA, WHO 2003). NHA is an easy to understand framework of the financial picture of a country's health sector. It also has been termed as SHA for developing countries. NHA helps to decode how much is spent on what, by whom, who are the beneficiaries and what are the quality of outcomes of those expenditures.

For achieving this analytical framework NHA uses a standard set of tables which are in the form of 'origin to end matrix' type involving two actors at a time. This makes the comprehension easy for people from non-specialist background also, to gain an idea, and frame policy recommendations. WHO suggests a maximum of 9 matrices,but a minimum of 4 matrices are required for NHA, to be understood as a percentage of Gross Domestic Product (GDP) justifiably spent on the health sector.

The manual on how to build a Reproductive Health Account (RHA), 2009 was an outcome of joint efforts of WHO, United States Agency for International Development (USAID), United Nations Fund for Population Activities (UNFPA), Netherlands Interdisciplinary Demographic Institute (NIDI), Partnership for Maternal, Newborn & Child Health (PMNCH) and Inter-American Development Bank (IDB).

Although Reproductive Health (RH) isn't a Millennium Development Goal (MDG), yet its need for wellbeing of a nation was unanimously felt. This manual tells how to adapt NHA framework and construct Reproductive Health Account (RHA) on the same principles. The actors would be same as NHA but specifically catering to RH sector. This type of sub-account under NHA would help transitioning economies to efficiently safeguard resources which are having multiple uses and yet achieve the goals set for a welfare state with appropriate development of human resource.

RHA uses similar origin to destination tables or matrices as they are called, and a minimum of 4 matrices are suggested for the 4 types of actors involved: FinancialSources, Financial Agents, Health Providers and Health Functions. It can give information as to how a

state's GDP percentage is being spent on health and what percentage of that is being spent on RH. For this purpose, the classification of components to be included in RHA is important. There are certain guidelines given by NHA and RHA manuals of WHO. The advantage is that the RHA has a flexibility of classification according to local context as long as it is in alignment to the country's NHA. The boundaries, as defined by WHO guideline for RHA, is typically a year, actions within a nation's geographical borders, measurable in terms of money and avoiding overlaps with other health care activities as far as possible.

1.1.1 Evidence of Global attention

The program of Action of the International Conference on Population and Development (ICPD) held at Cairo, 1994, defined Reproductive Health (RH) as 'a state of complete physical, mental and social well- being, and not merely the absence of disease or infirmity, in all matters relating to the reproductive system and to its processes and functions.' (ICPD, 1994; Chapter 7). It called for goals in RH services to be attained by 2015, like the presence of sufficient information awareness about health care services, empowerment to take voluntary and responsible decisions regarding child bearing, family planning and ample ways to meet reproductive health needs throughout one's life cycle in line with local community needs.

1.1.2Indian Scenario

Post-independence there were a few milestones that were achieved in the domain of reproductive and infant health. Primary Health Centre Net Work & Family Planning Programme was launched in 1952, Department of Family Planning created in 1961, MTP Act passed in 1971, Expanded and Universalization of Immunization by 1985, Child Survival & Safe Motherhood Programme in 1992, Reproductive and Child Health (RCH) Phase-I & II in 1997 and 2005 respectively initially focusing on lowering Infant Mortality Rate (IMR) below 60/1000 live births and Maternal Mortality Rate (MMR) to less than 400/100000 during childbirth and minimizing regional variations in Reproductive and Infant care facilities to bring in equity and accessibility to citizens even in the remote areas.

The RCH II and Millennium Development Goals (By 2015) were working towards achieving reducing population growth rate (16 % in 2001-11between last two documented census), bringing down IMR, reduce MMR by 75% of 1990 levels, reduce Under 5 Mortality Rate by 65% of 1990 levels. There was seen a paradigm shift from vertical to Integrated service delivery programs, camp oriented to client oriented, target to goal and quantity to quality orientations in the (Reproductive Health) RH sector. The components in RH

specifically included essential and emergency obstetrical care, strengthening of MIS, referral and project management infrastructure, capacity building,Integrated Management of Neonatal &Childhood Illnesses (IMNCI) and launching innovative schemes to reach the poorest and the remotest sections of the nation.

The 12th FYP had targets of IMR to be less than 25/1000 live births, MMR to less than 100/100000 live births and Total Fertility Rates (TFR) to 2.1 by 2017. It also targeted to increase perinatal care facilities by 100%, Institutional birthing by 5.6% annually from baseline of 61%, antenatal care at annual increase of 6% from baseline 53%, reduce unmet family planning needs, increasing coverage of immunization and timely emergency care for complications during childbirth.

1.2Rationale for the study

Reproductive Health, although not an explicit goal under Millennium Development Goals but its importance has been universally acknowledged. This indicates that there would be more infrastructural needs necessitatingfuture investments. Resources are scarce and the demands are multiple which is aggravated by the fact that public sector alone is not able to match up to the aggregated needs resulting in a poorly performing reproductive health care sector. What is required is a "combination of actors and activities whose primary aim is to promote, restore or maintain reproductive health, mobilize resources from governments, donors in the private sector and households, and channelize resources into institutions aimed at better reproductive health status of women and men and better health of infants and children" (WHO, 2003).

In the domain of health analysis, sanctioning of funds, their allocation from various agencies, flowing into diverse financial agencies, moving into multiple activities and eventually reaching huge number of beneficiaries via numerous providers is a complex process which needs organization and monitoring at all points of time and space.

Moreover, recently in most of the developing nations there has been a shift in attention towards disease like HIV/AIDS control which has diverted a huge chunk of funds into this domain leaving a lot of basic RH needs neglected.

Constructing RHA is one way to ensure that there is equity and compatibility between the national goals and the flow of funds thereby. Especially in countries where National Health Accounts have been already mapped, created and made functional, adding RHA as a subaccount will bring in more clarity and transparency for all the stakeholders involved by reducing overspending and increasing underfunding in some of the areas. If the NHAs are

constructed in line with global standards/guidelines as given by WHO/World Bank, then an appropriate replication in desired methods, according to the needs of the local context(State/District), in the area of RH would be purposefully catered by setting up of RHA as satellite/sub-account of NHA.

At the Special Session of the African Union Conference of Ministers of Health at Maputo, September 2006, the Ministers of Health adopted the subaccounts as a policy tool to advocate for increased resources. Specifically, the Ministers endorsed the following text (African Union, 2006): “It is recommended that Health Ministries use NHAs and [sexual and reproductive health] SRH sub-accounts as tools in their policy dialogues. They should institutionalise NHAs and SRH sub-accounts to ensure systematic tracking of expenditures, improving not only efficiency in allocating funds but advocacy for more resources for health. Countries and donors should co-operate to develop national capacity to undertake NHAs and SRH sub-accounts."

The primary aim of our National Health Policy, 2017, is to inform, clarify, strengthen and prioritize the role of the Government in shaping health systems in all its dimensions-investments in health, organization of healthcare services, prevention of diseases and promotion of good health through cross sectoral actions, access to technologies, developing human resources, encouraging medical pluralism, building knowledge base, developing better financial protection strategies, strengthening regulation and health assurance.

1.3General Characteristics

According to WHO guidelines for RHA, 2009, potential indicators for RH subaccount maybe categorised into General, Financing sources, Household expenditure, Financing agent, Provider, Functional and RH functional categories.

General includes total RH expense by region, by functional category, per woman/man of reproductive age, as percentage of GDP and as percentage of total health expenditure. Financing sources include contributions from public, private, donors and linking these contributions to the end users. Household expenditure indicators include total spending as percentage of RH spending, out of pocket expense on RH, out of pocket spending per woman, out of pocket spending on RH as percentage of total health spending. Financing agent indicators would include RH fund managed byHealth Ministry, NGOs and donors, households, health insurance companies etc. Provider indicators are expenditure as percent of total RH expenditure by ownership type private/public and by facility type hospital/shops/clinics etc. Functional indicators are curative care as a percentage of total

health expenditure in RH account which is comprised of inpatient and outpatient curative care, prevention and public health programs as a percentage of total health expenditure in RH and also health administration as percentage of total health expenditure in RH. Lastly, RH functional categories include maternal health services prenatal/delivery/postnatal as percentage of total health expenditure in RH incurred by facility type and financing sources, family planning, abortion, cancer, RTI and STI care, promotion of sexual health as percentage of total health expenditure in RH.

1.4Background of the Macroeconomic context of Healthcare in India

The backdrop of health financing has changed in the last one and half decades around the globe starting from year 2000-2016 according to WHO, database on global health expenditure of this millennium. According to the inter-country comparison over this tenure, India's macroeconomic context stands in a juncture where the economic foundation of the nation is firm and growing at a moderately desired level yet the health sector doesn't indicate desired welfare objectives being met.

Table 1

Trends in Macroeconomic Indicators of Health in Indian Economy

Trend in Variables	2000 1	2001 2	2002 3	2003 4	2004 5	2005 6	2006 7	2007 8	2008 9	2009 10	2010 11
Domestic general government health expenditure (% of general government expenditure)	3.29	3.17	2.87	2.75	2.81	3.03	2.95	2.96	2.97	3.19	3.17
Domestic general government health expenditure (% of current health expenditure)	20.68	18.87	18.16	18.72	17.98	20.13	20.51	20.89	22.63	25.61	26.21
Domestic general government health expenditure per capita (current US$)	3.83	3.74	3.68	4.13	4.52	5.59	6.08	7.52	8.6	9.83	11.86
Out-of-pocket expenditure (% of current health expenditure)	71.7	74.1	73.37	73.43	72.48	73.15	72.26	70.81	69.15	66.76	65.19
Current health expenditure (% of GDP)	4.03	4.26	4.24	4.01	3.96	3.79	3.64	3.52	3.52	3.49	3.27
Current health expenditure per capita (current US$)	18.56	19.86	20.3	22.07	25.14	27.75	29.65	35.96	37.99	38.41	45.25
External health expenditure (% of current health expenditure)	2.68	2.33	2.45	1.52	2.23	1.53	1.46	1.51	1.87	1.02	0.97
External health expenditure per capita (current US$)	0.5	0.46	0.5	0.34	0.56	0.43	0.43	0.54	0.71	0.39	0.44

Trend in Variables	2011 12	2012 13	2013 14	2014 15	2015 16	2016 17
Domestic general government health expenditure (% of general government expenditure)	3.49	3.52	3.1	3.03	3.14	3.14
Domestic general government health expenditure (% of current health expenditure)	28.87	27.98	23.07	23.66	25.64	25.43
Domestic general government health expenditure per capita (current US$)	14.07	13.72	12.97	13.52	15.12	15.94
Out-of-pocket expenditure (% of current health expenditure)	62.23	63	69.07	67.01	64.66	64.58
Current health expenditure (% of GDP)	3.25	3.23	3.75	3.62	3.6	3.66

Current health expenditure per capita (current US$)	48.72	49.05	56.22	57.15	58.97	62.72
External health expenditure (% of current health expenditure)	0.87	0.94	0.27	0.75	0.71	1.02
External health expenditure per capita (current US$)	0.42	0.46	0.15	0.43	0.42	0.64

Source: Global Health Expenditure Database, by WHO.

All the above 12 variables are categorised under WHO Financing Sources. Definitions are provided below:

Domestic General Government Health Expenditure as % General Government Expenditure: The share of domestic general government health expenditures of general government expenditure indicates the priority of the government to spend on health from own domestic public resources. (Public sources include domestic revenue as internal transfers and grants, transfers, subsidies to voluntary health insurance beneficiaries, NPISH or enterprise financing schemes as well as compulsory prepayment and social health insurance contributions. All these transfers and subsidies represent public sources for health and indicate the overall share of government funding for health.)

Domestic Health Expenditure as % of Current Health Expenditure: It contributes to understand the size of domestic resources used to fund healthcare expenditures relative to external sources for health facilitating international comparison, especially for countries which receive donor funding.

Domestic General Government Health Expenditure as per capita in USD: It contributes to understand the general government health expenditure relative to the population size facilitating international comparison. (The general government expenditure represents all public spending by the general government units and the GDP represents the overall output of the country).

Out of pocket Expenditures as % Current Health Expenditure: The share of direct household spending on health of the overall current health expenditures indicates how much health is funded domestically by households at the point of use.

Current health expenditure as % of GDP: Current health expenditure as a share of GDP provides an indication on the level of resources channelled to health relative to other uses in the overall economy. Current health expenditure corresponds to the final consumption of health care goods and services while excluding investment, exports and intermediate consumption.

Current health expenditures per capita in USD: This indicator calculates the average expenditure on health per person

External Health Expenditure as % of Current Health Expenditure: External sources compose of direct foreign transfers and foreign transfers distributed by government encompassing all financial inflows into the national health system from outside the country.

External Health Expenditure per Capita in US$: This indicator calculates the average external sources spent on health per capita in USD currency

Domestic general government health expenditure (% of general government expenditure) hasn't changed much in the last 16 years. The share of current health expenditure in GDP is 3.66% which is abysmally low compared to around 10% prevailing rates globally. Domestic general government health expenditure (% of current health expenditure) is stagnating for the last 7 years. Domestic general government health expenditure per capita (current US$) has grown steadily over the years from 3.83 to 15.94. Out-of-pocket expenditure (% of current health expenditure) although, has come down yet, is maintaining at high levels of 64.58 from earlier 71.47,shows the dominance of private healthcare expenditures which will definitely lead to skewed consumption expenditure towards health. Current health expenditure (% of GDP) has reduced from 4.03 to 3.66. Current health expenditure per capita (current US$) has steadily increased from 18. 56 to 62.72. External health expenditure (% of current health expenditure) has reduced from 2.68 to 1.02. Although External health expenditure per capita (current US$) has been almost the same from 0.5 to 0.64.

Table 2

Growth rate in Annual Percentage of Health Financing

% Annual Growth Rate in National Indicators and Health Financing Indicators		
Population	2016-17 to 2017-18	0.78
GDP	2016-17 to 2017-18	9.82
Public Health Expenditure	2016-17 to 2017-18	19.48
Per Capita Public Health Expenditure	2016-17 to 2017-18	18.61
Public Health Expenditure as a % of GDP	2016-17 to 2017-18	9.40

Source: National Health Profile 2018, 13th Issue by Central Bureau of Health Intelligence Directorate General of Health Services Ministry of Health & Family Welfare, Government of India, WHO Collaborating Centre on Family of International Classifications (ICD-10, ICF & ICHI)

The annual growth rate from FY 2016-17 to 2017-18, of Public Health Expenditure as a % of GDP and GDP itself, are similar which indicates these two variables are growing in tandem further indicating that Government is syphoning consistently, funds in this direction. Public Health Expenditure and Per Capita Public Health Expenditure growing at similar rates also indicate that there is equity in Public Health Expenditure.

Moving on to another area of concern in Macroeconomic health indicator is Catastrophic health expenditures. Catastrophic health expenditures caused by very high unplanned and poorly financed out-of-pocket expenditure (OOPE) has led to general impoverishment.

According to WHO estimates from NSSO 68th round consumer expenditure data of 2011, the condition is alarming. It is depicted by the table below:

Table:3

Catastrophic Health Expenditure and Impoverishment due to OOPE, 2011

Population	Catastrophic expenditure		Impoverishment by OOPE	
	Threshold 10%	Threshold 25%	Poverty line PPP=$ 1.90	Poverty line PPP=$ 3.10
%	17.33	3.89	4.21	4.56
Headcount (in millions)	216.11	48.51	52.50	56.86

Source: Health financing profile 2017, India by WHO, South East Asia Series
WHO has proposed that health expenditure be viewed as catastrophic whenever it is greater than or equal to 40% of a household's non-subsistence income, i.e. income available after basic needs have been met.

Based on last documented census 2011 data, 17% spent more than 10% of their total budget on health, translating to 216 million people; in addition, 52.5 million of the population were pushed below the poverty line of PPP$ 1.90 per capita per day.

Moving on to a lesser peripheral macroeconomic context, the state wise distribution of Public Health expenditure also shows a wide range of percentages of Gross State Domestic Product. State of Karnataka, for instance, spends way lesser than national average when it comes to public spending as a percentage of GDP. The table below depicts an overview of the Public Health Expenditure scenario in the state of Karnataka.

Table:4

Macroeconomic Context of the State of Karnataka Economy and its Healthcare Sector Financing

Level of Comparison in year	THE (in million Rs)	Population in million	Per capita TGHE	GDP/GSDP (in million Rs)	TGHE as % of GDP/GSDP	GGE (in million Rs)	TGHE as % of GGE
India (2013-14)	129778	1230	1042	112727640	1.15	34341820	3.78
Karnataka (2013-14)	46560	63.7	731	6146070	0.76	1061360	4.39
Karnataka (2015-16)	68900	62.1	1124	10128040	0.69	1387150	5.03

Family Welfare as part of Social Services	
Family welfare including Mother and Child Health (MCH) in (2013-14)	780 (in million Rs)
MCH (2015- 16)	637.65 (in million Rs)
MCH (2016- 17)	153.50 (in million Rs)
MCH (2017- 18)	187.50 (in million Rs)

MCH: Mother and Child Health
Source: Government Health Expenditures in India (2013-14), Published in 2017 by NHATS, NHSRC and MHFW, GoI, Health Finance Indicators, Chapter 4.
Health Sector Financing by Centre and State/UTs in India (2015-16 to 2017-18), compiled by National Health Accounts Cell, MHFW, GoI.

In the two financial years between 2013 and 2016, although per capita public health expenditure has increased substantially but public health expenditure as a percentage of GSDP has decreased rather than increased. This indirectly means that the total public health expenditure has increased in comparison to a slightly decreasing population amount leading to per capita rise yet, in comparison to the GDP it has nor caught pace. The share of MCH has fallen drastically in the year 2017 although reported an increase again in year 2018. The share of Mother and Child Health expenditure has fallen drastically over the last five years.

Moving on to District level, Ramanagara district of Karnataka, had a GDDP of 128518(NDDP 116914.8) in million Rs in 2013-14. The district was contributing 2 % to GSDP. Per capita NDDP at 2013-14 current prices was 105014 Rs per annum. Health and especially Reproductive health expenditure data documents at District level were not easilyaccessible in the public domain, so further review was limited.

1.5 Overview of Chapters

The synopsis report has been divided into the following sections for better understanding. *Chapter One* deals with the introduction, general characteristics of the topic of discussion, macroeconomic context of health in India, rationality for undertaking the study. *Chapter Two*discusses the review of related literature leading to

the research gap. *Chapter Three* is composed of the details of methodology stating the research problem statement, research questions and objectives leading to conceptual and theoretical framework for the study. *Chapter Four* is a continuation of the details of methodology used in the main study design and the associated studies. *Chapter Five* culminates the discussion, suggests policy recommendations, states the limitations and delimitations of the study and the scope of further research.

2.Review of Related Literature

The importance of concept of health has evolved from absence of disease in 1948 to realization of aspirations by using health as a resource base in 1984 as per WHO. The theme of reproductive health has also evolved from just a sub-component of health to a more comprehensive right of expressing and exercising reproductive well-being.

To put into separate themes after analysing the relevant contexts, content and processes undertaken by various studies over the last few decades, the researcher could identify four well-defined focus areas that were clearly identifiable. They are as follows:

Importance of in-depth Analysis of Health and Reproductive Health (RH), Development, Construction, Methodology and Implementation of National Health Accounts (NHA) and Reproductive Health Accounts (RHA), Predictors, Outcomes and Implications of Out-of-Pocket Expenditures (OOPE) in Health& Demand side of Health and Reproductive Health.

There were numerous sub-themes which could be identified as major variables or constructs of these four main themes. Literature based on these four main themes are chronologically discussed below:

2.1 Theme dealing with Importance of an in-depth Analysis of Health and Reproductive Health

One of the pioneering studies by Mach and Abel-Smith (1983) in their WHO published report, drew world attention towards the crucial need to develop a manual for developing economies in the health sector and to pay attention in reducing the errors that come with household surveys, whichwere extremely crucial in this direction. According to them the objectives of a health financing study were to collect data on expenditure, find the sources of expenditures and link both to national objectives, national resources and finally make recommendations about how to cut costs, deliver more equitably and how to finance in new ways.

ICPD (1994) A decade later, in The International Conference on Population and Development (ICPD) in its Program of Action, 1994, involving 179 member countries, unanimously agreed that investing in reproductive and sexual health will enhance the quality of life and improve other aspects of development. This investment will enhance environmental sustainability and the dynamics involved in population. It called out for immediate ban on traditional practices of gender-based violence. Itreached out for awareness and commitment of participant and donor countries to support each other in achieving universal access and equity in RH in the next two decades horizon.

Julio (1995)took forward Mach and Abel-Smith's stress on developing a Health Financing Manual and ICPD's call for sexual and reproductive health rights, reiterated constructing an analytical base for potential RH reforms and called out for linking health sector conditions with the nation's economic development. The analytical base would start from identification of a problem, may be like a disease, leading to R & D into cost effectiveness, capacity analysis, financial analysis using NHA, political mapping of feasibility, proposing the reform, undertaking survey for consumer expectations for finally arriving at a health package as a solution.

Working on similar lines as an analytical base and formulating a health package, post ICPD, in the next year, Pachauri (1995), wanted to integrate a framework for RH in Indian context in order to bring reforms by extending RH beyond family planning and inclusion of private sector and NGOs in India to formulate an essential RH services package.The author suggests a framework for recommending a services package for RH keeping in mind that this will help policy makers weigh the feasibility and the costs involved in implementing these packages. The problem in the Indian context is the diversity of needs and resources across the country. So, a comprehensive and an essential package is suggested depending on the need and resources available. An operations research would be required to check for feasibility and benefits, at all levels of healthcare.

Talking of framework, a conceptual framework was evolved in the context of fast changing Chinese Healthcare system by Hsiao (1995). The study looked at the latest change in Chinese healthcare policies which were well intended but not well executed leading to lessons to be learnt by their society and other fast developing and gradually evolving market economies. The robust system in place for two decades was modified to keep pace with opening of Chinese economy and laissez-faire policy,but in rural healthcare at primary levels based on user-fees and ability-to-pay, was creating havoc. On one hand the Chinese

Government was controlling everything in tertiary care but had led a free hand in pharmacy leading to exorbitant medicinal care prescriptions by professionals and lengthy stays in hospitals. Technical equipment being funded by Public finance was also misused for stocking up capital. One more finding which was extremely interesting is that despite of all mismanaged Chinese Healthcare System yet the life expectancy increased manifold. This was the impact of other externalities like investment in education, hygiene, indigenous care and provisions like pure food and water.

Taking this idea of developing a framework first andprivate sector inclusion, the study by Pradhan (1996) stressed on evaluating public spending using a macroeconomic perspective. The authorhighlighted the need to evaluate public spending to get a picture of disaggregated composition of spending into various domains of health. The framework the study provided was of six key areas to critically review public spending. They were the conformity with the macroeconomic set-up of the nation, maximising social welfare, complementarity to private interventions and not substitution, cost-benefit analysis, allocation among current and capital expenditures and finally budgetary structure review and conformity.

Although the inclusion of private players was kept intact, moving a step further in the same year, shifting the stress from macroeconomic to microeconomic overview, from general health to RH in particular, Measham and Heaver (1996)broadened the base of RH from Family Planning to Mother and Child Care in Indian context. In their analysis of Indian Family Planning Program suggested that there should be micro-planning and set of incentives and disincentives to sectors and components as and when required. They concluded that this sector although had been majorly public based yet we should look beyond this frame and focus on evolving private players in order to reach from singular family planning strategy and become more of Mother and Child health focused.

Taking the focus off planning in earlier studies, Aral and Peterman (1998) called for attention shift towardsimplementation efficiency especially of RH interventions and the methodological issues involved thereby. In their study they questioned the effectiveness of RH interventions in specific areas like diseases and understand the barriers in designing and disseminating such interventions. Rigour in scientific interventions is important but to the extent that the rigour can be adaptive to the context. Dissemination should be inherent so much in the culture of intervention that authentic information can be analysed and replicated.

Bringing in a new dimension in the same year, working on similar lines as Aral and Peterman, Behrman, Jere and Knowles (1998) looked at efficiency of interventions from a different angle, that of cost,as considered in economics. They focused on deciding whether an intervention is efficient by using marginal costs and marginal benefits equating theory. Theyconcluded that an investment (or expenditure) in population and reproductive health services is efficient if the additional (marginal) social benefits of the last unit of that investment just equal its additional (marginal) social cost. If the social marginal benefit of a particular investment is greater (less) than the social marginal cost, society is not investing enough (is investing too much) and would benefit from increasing (decreasing) the level of investment until the social benefits and costs become equal on the margin. Although applying the above rule maximizes social gains, private maximizing behaviour leads to population and reproductive health investments at the level at which the private marginal benefit of the investment equals its private marginal cost under the assumption that, given the information available to them and the constraints that they face, individuals act in what they perceive to be their best interests. To reach, the equalization of social marginal costs and benefits there might arise a need of a taxation or a subsidy by Government. Distribution is a major policy motive distinct from efficiency. Society well might want to ensure that everyone has basic social services even at some cost in reduced efficiency and productivity. Sometimes family planning, education, health, and nutrition services are viewed as 'merit goods' that are socially desirable by themselves.

Working in the lines of Behrman and Knowles, Bobadilla, Cowley, Musgrove and Saxenian (1999)added a subjective concept of opportunity costs and trade-offs involved between private and public sector participation in providing health packages. They also linked the concept with externalities involved in these provisions. They stressed on designing an essential national package of health services customised to a nation's needs and include cost-benefit analysis of services across private and public sectors keeping in mind the trade-offs involved in quality, cost and equity. The components of the package should be fixed after consultations with all the stakeholders, the priority of national objectives and the endowment of financial resources available.

In the same year, Musgrove (1999)brought in another added layer into the concept of externalities,as proposed also by Bobadilla, Cowley, Musgrove and Saxenian, the layer of their hierarchy, in terms of national objectives and endowments. They looked into the relation of different criterions in public spending in healthcare like externalities, ethics, equity,

subsidy, privatization, and protection against catastrophic needs. The author stresses more on criterions and their hierarchy of importance based on the national objectives of a nation. There should be an eye also on the overlapping as well as the inconsistencies among the criterions which have to be looked into before planning and allocating for public spending on health.

Keeping in mind Endowments and Objectives to be achieved as other studies done in the same year, as mentioned above, Potts, Walsh, McAninch, Mizoguchi and Wade (1999) looked at the sum total of Endowments to receiving nations and compared it with the amounts promised at ICPD, 1994. After five years of ICPD, working on endowments for receiving countries, as conceptualised in the Plan of Action, they did an in-depth analysis of the resources available and being dispensed globally on reproductive health and arrived at the conclusion that the ICPD 1994 goals and the projected costs that would take these goals to be fulfilled are more compared to donations disbursed, which were clearly insufficient. The problem is that the international lending is more or less matching but the international donors haven't been able to contribute the requisite amount partly due to the fact that the requisite amount itself has risen due to increase in inflation and incidence of diseases in the developing economies. The contributors to these nations have to relook at the cost-benefits of the priorities of projects before funding and make sure they are optimal in terms of equity and welfare.

A year later, the study by Dayaratna et.al. (2000) once again revisited the phase of planning efficacy of RH interventions as done by authors Measham and Heaver earlier in 1996. This particular study tried to incorporate objective economic concepts of cost with subjective benefit analysis and link it to economic principles of ability to pay and subsidise otherwise, concepts. This study under POLICY Project, implemented by The Futures Group International, Inc., in collaboration with Research Triangle Institute and The Centre for Development and Population Activities funded by The U.S. Agency for International Development (USAID), talks about economic criteria behind public interventions in RH. Criterions like equity, efficiency, social benefits, subsidies based on ability to pay, subsidies to both, deserving public and private sector providers. Itfocused on effectiveness of RH interventions by cost and called for Government's role determination in financing RH.

In the same year, Hardee and Smith (2000), broadened the base by discussing the administrative platform rather than the operation of intervention in RH. They were concerned

whether nesting RH reforms within Health reforms would yield the desired goals of ICPD conference. The reforms were decentralization, integration, service packaging, broadening health financing options, defining public and private sector roles and sector wise assistance program. One of the reforms that was decentralization was of major concern since it wasn't planned or implemented scientifically. Decentralization was a process which was, as time taking, as roughly about two decades so hastening it would enhance its chances of failure.All reforms needed to be horizontally integrated rather than vertically, as generally done in low income countries. They also referred to the flaws of Disability Adjusted Life Year (DALY) method used in calculation of essential health package which used the loss of income and wealth due to ill-health as a measure for prevention of diseases. The flaws were that it included only wage loss of middle age and able bodied, and neglected the disabled, old and young who were excluded.

In the same year, another study by Rannan-Eliya, Berman, Eltigani, de. Silva, Somanathan, Sumathiratne, and Rannan-Eliya (2000) used NHA framework method to compare between RH expenditures made by two different countries covered under one Project. They did an exhaustive study under the POLICY Project whichwas a five-year project funded by USAID/G/PHN/POP/PE. It was implemented by The Futures Group International in collaboration with Research Triangle Institute (RTI) and The Centre for Development and Population Activities (CEDPA). They compared the RH expenditures of Egypt and SriLanka using NHA framework and arrived at bilateral comparisons. Both countries were spending most on obstetric and gynaecological functions. Egypt had a little higher per capita RH expenditure compared to Sri Lanka but the latter was using less resources more efficiently.

In contrast to Hardee and Smith, who pointed out the limitations of using Disability Adjusted Life Year method, AbouZahr and Vaughan (2000) in a WHO bulletin study, in the same year, used disability-adjusted life years DALY to measure and calculate the importance of RH health via measuring the loss of ill-health and the complications involved in this strategy. The RH related disorders made for about 5-15% on global burden of diseases. DALY measures loss due to death and disability caused by RH disorders. This measure although had issues of defining what was to be included under reasons of mortality and RH, yet was the only measure which combined ill-health with loss of resources.

Following on the lines of Measham and Heaver in 1996, Ramasubban, and Jejeebhoy (2000) drew attention over the paradigm shift from only contraception as a focus area to a more comprehensive RH care. Their book was a compilation of 19 studies which talked of RH from all perspectives of sexual health and sexual rights, both of which were determinants of health seeking behaviour. It targeted the marginalised and looked into public and private sectors for providing services to meet the crucial demands of service utilization.

Blending in Macroeconomics and Microeconomics, moving on from the concept of hierarchy of national objectives as proposed by Musgrove in 1999, Araújo Jr and Maciel Filho (2001) talked of hierarchy in financing sources, as one actor in the health sector. Theyindicated that an operational framework for health policy analysis is the requisite for catering to actors, their hierarchical position in resource flows, deciding on mixture of control models between rational, incremental, mixed and strategic, placing of actors according to context, content and process and lastly the impact of politics at macro levels seeping into micro indicators.

In the following year, after a call on prioritization of financial sources byAraújo Jr and Maciel Filho, Standing (2002)stressed on customization of health sector financing sources.In the working paper by Institute of Development Studies, Sussex, study stressed on greater individualization in modes of financing delivery for fund flows to achieve enhanced healthcare.

After studies on planning and implementation of RH interventions by Measham and Heaver in 1996, Aral and Peterman in1998 and Dayaratna et.al. in 2000, Singh, Darroch, Ashford, Vlassof, (2003) moved on to focus on outcome of RH intervention. In their study under the aegis of Guttmacher Institute and UNFPA called for Cost-Benefit analysis into RH to find out medical and non-medical benefits of RH interventions. The report pointed out that half of the women giving birth didn't get full antenatal care, millions have unmet contraceptive demand and unsafe abortions leading to further complications and loss of wealth calculated by using DALY method. The benefits of family planning and mother and child care interventions would include drastic reduction in maternal deaths, unintended pregnancies, neonatal deaths and unsafe abortionsplus the loss to wealth, using DALY method predicts, would reduce by 70%.

Following the steps of Potts, Walsh, McAninch, Mizoguchi and Wade in 1999, Claeys and Wuyts (2005) appealed to donor countries to keep up with their promised intention to offer

help financially and on infrastructural grounds. The study looks into the amount of aid that was promised by developed nations during ICPD conference 1994 towards achieving the RH goals. Study reveals that promises have either seen a downtrend or are still falling short of the projected levels. Sexual and reproductive health is a right and not a stand-alone health amenity. It encompasses the need to have explicit policies and documentation in nations rather than being a part of their health policies.

Factors like influence of cultural & family backgrounds or influence by specific members are crucial for understanding issues in access and equity in RH care according to various studies like Mistry, Galal, and Lu (2009), Saikia and Singh (2009), Char, Saavala and Kulmala (2010),and Begum, Dwivedi, Pandey and Mittal (2010). Studies by Lim et. al (2009) also brought out factor like infrastructural deficiencies to be a barrier for accessing timely RH care.Allendorf (2010) a University of Illinois study, looked at marital equations and their quality and correlated it to usage of maternal healthcare utilization. The author found out that in Indian nuclear families, women with better marital relations with their spouse and in joint families, better relations with their in-laws are the ones using reproductive health utilities to a greater extent (Allendorf, 2010). Time and again several studies like Mohanty and Pathak (2009), Pathak, Singh, Subramanian (2009), Prakash, Singh, Pathak and Parasuraman (2011), Kumar, and Mohanty (2011), Hazarika (2010), Kumar et al.(2011), have all pointed out that RH care was being rarely used by poor/marginalised women. Agrawal (2009)in a study by Hubert H. Humphrey Institute of Public Affairstries to measure unmet contraceptive needs, find out reasons looking through the lens of National Population Policy 2000 which aimed at bringing Total Fertility Rate to 2.1 by 2010 using qualitative interviews and quantitative data from existing studies.It also drew attention to coercive strategies by Government to be a dominant reason for setback in RH care.

ICPD (2019)at Nairobi amidst marking 25 years of ICPD 1994 at Cairo, the member countries in International Conference on Population and Development agreed to the former principles of ICPD as being essential to achieve the 17 Sustainable Development Goals (SDG) covered under Agenda by 2030. This calls for even greater cooperation, collaboration and commitment among participating countries especially donor nations as stressed earlier by studies undertaken by Potts, Walsh, McAninch, Mizoguchi and Wadein 1999 and Claeys and Wuyts in 2005.

2.2Theme dealing with Development, Construction, Methodology and Implementation of National Health Accounts (NHA) and Reproductive Health Accounts (RHA)

Universal Health Coverage (UHC) mission of WHO in 1948 redirected the need to institutionalise the system of NHA in mission adopting nations. System of NHA is a mechanism of capturing fund flows among all the actors involved in the healthcare system. It is developed on the basis of System of Health Accounts prescribed by Organization of Economic Cooperation and Development (OECD). Components of NHA are the actors involved in the entire system of health care accounting. They are mainly categorised as Health Financing Sources, Health Financing Schemes, Health Providers and Health Functions.

Health Financing Sources can be mainly classified into public, private and donor sectors. There are many types of sources, financers, providers and functions and they all have their respective share of influence on the NHA. Households play multiple roles as actors. They are contributors, financers and benefiters of health functions. Households form an important financing source as part of private sector. Expenditures by households incurred for the cause of financing healthcare is termed as out-of-pocket expenditures (OOPE). It forms a major chunk of all healthcare financing. Share of its contribution ranges from 70-85% in developing economies.

One and a half decade after the inception of UHC mission by WHO, Abel-Smith (1963) under the aegis of a WHO study, had undertaken a pilot study across 6 countries Ceylon, Chile, Czechoslovakia, Israel, Sweden and US, to define economic and medical concepts before applying it to healthcare costs and financing. The study compared between the current and capital expenditures on health as a percentage of the country's Gross National Expenditure, General GovernmentConsumption Expenditure and Private Consumption Expenditure.

USA started constructing NHA in the year 1964 as reported by Lazenby, Levit, Waldo, Adler, Letsch, and Cowan(1992). The study quoted the evolution of NHA in the USA in the prior three decades and the modifications which came about gradually. These modifications were disseminated by this study so that the experiences can be replicated by other countries They were hopeful that their study of evolution can serve as an edifice of knowledge for constructing specialised health accounts under NHA.

Two decades later a study by Rannan-Eliya and Berman (1993) focused on difficulties in construction of NHA in developing countries. They raised a very genuine issue with benefits received by health services. Their point was that the outcomes of health services were a result of so many secondary activities along-with directly related activities that it is difficult to estimate exactly which service had what positive outcome and by how much. The tools to

measure the outcomes, for example, household surveys suffer from methodological issues like sampling bias and moreover by recall periods while providing data. Without accurate data from this source it is almost difficult to find out information about private sector especially data on out-of-pocket expenses, premiums on insurance funding etc. Although, it isnot impossible, but comes at a very hefty price. They reported that earlier manuals from Griffith and Smith faced similar issues. To mitigate this complication faced by NHA, they suggested that it is recommended to have satellite accounts on regional levels.

Moving on to using NHA for intra-nation comparison, Govindraj, Murray and Cheelaraj (1995) did a cross-sectional study in Latin American countries and highlighted five major criterions. They wanted to find out the amount of health expenditures being borne by various types of insurance for individuals and contrast it with their socio-economic demography, calculate the percentage of GDP going towards health, disaggregate expenditure by types and source of financing and calculate time series data accordingly.

Expressing similar concerns as earlier in his joint study with Rannan-Eliya in 1993, Berman (1997) in his study revealed the presence of pluralistic source flows in developing countries requiring extra detailing into informal and formal fund flows. The exhaustive detailing includes the stress on two things. The first being analytical framework of what to include and how to define the actors and second being the method of how to estimate each component included in the analytical framework. Author also points out the issue faced by developing nations of the confusion between trying to match NHA with revised SNA or to build satellite accounts and try to align them in accordance to SNA with respect to estimation methods of categories of expenditures.

Taking health expenditure and pointing at its skew towards rich nations a study three years later by Poullier and Hernandez (2000) offered solution by scrutinising each sub-domain of NHA. The more exhaustive the better, they pointed out the need for inclusivity of all six actors, financing sources, financing agents, providers, functions, resources and beneficiaries while constructing NHA matrices.Commenting on the 15/75-85/25 ratio (15% of world population of rich countries spent 75% of the world expenditure on health and the rest 85% population spent only 25%) they suggested NHA as a remedy. The study also reported the total health expenditures by group of nations as a percentage of their GDP. Among the South East Asia Region nations, India was spending 5.2% of GDP on health and the OOPE was at an alarming rate of 84.6% of total health expenditure. They revealed that irony of this kind of situation could be reduced by bringing transparency in health evaluations so that it could be

located which item in healthcare requires how much and is being sourced by whom. NHA framework wascapable of bringing this kind of transparency.

Expressing concerns about overlapping roles played by different actors involved in NHA, on similar lines like Berman and Rannan-Eliya in 1997, Kutzin(2001)provided a two-way conceptual framework which kept individuals on one hand as contributors and on the other beneficiaries of health financing systems. It tried to address the problem of confusion between policy tool and policy objectives in low and middle-income countries where there were pluralistic components at all levels.

Following on the ideology by Rannan-Eliya and Berman in 1993, who recommended satellite accounts at regional levels so as to bring down accounting complications of NHA, aproject by Panchamukhi et.al.(2002) by Centre for Multi-Disciplinary Development Research, Karnataka, India and NIDI with support from UNFPA/UNAIDS was undertaken. They tried to map the state of Karnataka,as a regional unit, comprehensively for its status in reproductive health provisions and the list of all actors involved in terms of providers, financers, consumers and inputs/activities. The study mentioned what needed to be understood by the researchers before they set out for attempts to construct RHA,a prospective satellite account of NHA at a regional level.

Taking a step even deeper towards decentralization and trying to construct Health Accounts at an even lower unit of planning at District Level a study by Annigeri (2003) tried to construct District Level Health Accounts (DHA) in the District of Dharwad, State of Karnataka based on matrix method of NHA. It discusses two major methodologies involved in health financing namely OECD and Harvard School of Public Health in relevance to constructing a micro-level health account with a district as unit of planning. OECD considers financiers, providers and functions into consideration whereas Harvard School focuses on Sources, Agents and Uses. It stresses on health function and not health effects so exclude major food subsidy, awareness campaigns etc. Author also mentions that National Accounts and Health Account (HA) are not similar since HA components are complex. Author stresses on private sector details to be included rather than including public spending due to crunch of data in developing economies. The study uses secondary data on Public Spending from various sources at Government, and local bodies and primary data of household expenditures for private spending, NGO, Donor and two Private Providersto construct the DHA.

Similar to the report by Lazenby, Levit, Waldo, Adler, Letsch, and Cowan in1992, who disseminated the learning experiences of NHA in USA in the preliminary stages, Azzam,

Dhamo, and Kola, (2005) reportedabout the study they conducted in one of the lowest economic profile country of Europe, Albania, a country where the importance of health had been realised as a contributor to boost development. They discussed about the NHA as a framework that was being used for analysing intra-country health expenditure policy making issues and also for providing the essential information to outside donors who were assisting Albania in this direction.As part of Bamberg Economic Research Group, Bamberg University, working paper series, the study talked about the methodology of NHA and the complications involved to trace origin of sources and destination in Albania in health financing. They suggested a triple layer solution towards bringing in coordination and smoothness in NHA construction. The solution was to have a technical committee for data collection and analysis, a steering committee for interpretation of results to policy makers and a legislative body to implement the same.

Consolidating on the stress for the need of having satellite accounts of health, especially in RH, like previous studies by Rannan-Eliya and Berman in 1993, Berman in 1997 and Panchmukhi in 2002, Willekens (2005) under the aegis of UNFPA and Netherlands Interdisciplinary Demographic Institute (NIDI) underlined the crucial need for matrix form of satellite account under NHA to bring transparency in understanding the sector with all its actors and their continuous interplay in the Indian context. It would also help in capturing the fund flow at all levels and especially the layers of actor contributions into RH. It would serve as a simple tool to help analyse the whole sector better in order to frame sectoral policies at various levels.

The matrix format of NHA was reiterated again as a solution to transparency by Bocchi (2005). Reaffirming on the same idea of transitioning economies facing complexities due to pluralistic actors in all domains of health, study based on Latin American National Health Accounts network, gave details about how Latin American and Caribbean countries which are initiating health reforms are using NHA as a tool to prepare exhaustive matrices to capture public and private spending on health especially taking note of pluralistic actors in these countries.

Continuing with the success and acceptance of matrix format of NHA presentation by Azzam, Dhamo, and Kola in 2005, who reported about their study of NHA in Albania , a small low economic profile nation in Albania in Europe, the following year,Racelis, Dy-Liacco, Sabenano, Beltran, and Manaog (2006) confirmed that the new revised form of matrix format of NHA adopted by a small south east Asian country, Philippines,would be

extremely helpful for healthcare evaluation since it was restructured to classify use of funds even further by health providers, functions, location of facilities and demography of beneficiaries.

Incorporating NHAin an Asian context again, at a decentralised level representation like Annigeri in 2003, Lorenz and Khalid (2009)carried out a study in Pakistan.This study analyses provincial health accounts and district specific health accounts and draws parallels and differences in spending among actors at various levels**.** Theyconcluded that there is inconsistency of regional calculation methods intra-nation causing comparisons to be difficult.

Incorporating NHA once again, but in a more specialised domain of reproductive health, WHO (2009) published a guide to produce RH subaccount within NHA framework. This work was in continuation of the year 2000 pledge which aspired to achieve 8 millennium development goals by 2015, each of which required the significant improvement in RH specifically in developing economies. This process required a tool like NHA which gave detailed understanding of health sector finance. A subaccount of NHA would mean comprehensive information in the field of a specific domain of health. RHA was such a specialised domain subaccount.

Carrying forward the work by Azzam, Dhamo, and Kola in 2005 in Albania, Bocchi again in 2005 in Latin American and Caribbean countries Racelis, Dy-Liacco, Sabenano, Beltran, and Manaog in 2006 in Phillipines and Lorenz and Khalid in 2009 in Pakistan,Hopkins, Irava and Tin (2010) conducted their study In the following yearin three pacific island countries, Fiji, Micronesia and Vanuatu.In a project report of ADB and WHO, they looked into NHAs taking into account 4 actors of NHA. They also compared health scenarios among Asia-Pacific region nations using Asia-Pacific National Health Accounts Network APNHAN and found linear relation between a country's GDP and its health spending.

Moving on from GDP and its relation to health spending, the relation between per capita income and household health spending was explored in a study conducted in Malawi, Zere, Walker, Kirigia, Zawaira, Magombo, and Kataika (2010). They confirmed that there is a direct relationship between per capita income and household expenditure on healthcare and there was a dominant influence of private sector investment in total investment on health. Data was collected from three rounds of NHA to construct 4 matrices involving 4 actors. Data was collected from public health providers and financing agents. Secondary data from audit reports and budgets and primary data was collected from informant interviews.

Interviews were conducted with NGOs and questionnaires administered to donors. Questionnaire based survey data was collected from not-for-profit Insurance agency, interviews were conducted with employers and household survey secondary data was used. The findings revealed the need for increasing public expenditure on health, reduction in preventive and increase of curative care, a declining share of private sector contribution, increased dependency on donors and a drastic reduction of OOPE in this time period.

In the same year, a study conducted in the Australian context by Hort, Goss, Hopkins and Annear (2010) in their working Paper produced by the Nossal Institute for Global Health at the University of Melbourne, Australia drew world attention towards non-availability of cross-sectional data-sets across countries to compare NHAs. The study highlighted the need for the presence of three building blocks for efficiency in estimation of health finance. They are conceptual frameworks, quality data and accurate analysis leading to meaningful interpretations. The conceptual frameworks of Kutzin and Hsiao were compared and their sufficiency was confirmed. The analysis of health system and health outcomes was essential to suggest health financing strategy.

After a few years, in the Indian context, came the publication of NHA (2013-14), India after the last NHA, a decade back in 2004. This estimation was done under the aegis of NHRSC, MoHFW and GoI. The study used the SHA 2011 globally accepted framework for producing NHA. Using standardized HAPT tool for accounting, it produced 2x2 matrices based on origin to use matrices involving all four actors namely financial source, financial agents, health providers and health functions. It provided a tri-axial description of consumption, provision and financing. It concluded that NHAwas an appropriate tool in the economies having pluralistic nature of system of health sector.

Shifting our focus from Health to RH, from tracking systems available like NHA to developing tracking systems for RH, Saikia, and Kulakarni (2017)lamented lack of tracking systems via consistent surveys in reproductive healthcare to be a major drawback. They confirmed presence of disaggregated data on health and nutrition to be enough for tracking India's level of progress towards Sustainable Development Goals but due to lack of RH data, it was difficult to track its progress. They were very hopeful that better Health Management Information Systems, surveillance, modification of surveys can lead us towards this goal.

2.3 Theme Dealing with Predictors, Outcomes and Implications of Out-of-Pocket Expenditures (OOPE) in Health.

While some of the research were focusing on framework and some on decentralization, some during the same time period were focusing on implications found out from the disaggregated data provided by NHA. Mainly, the data related to private sector contributions being incurred on health expenditures in the form of Out-of-Pocket expenditures (OOPE). These studies were investigating into several factors which were either predictors or supposed outcomes of this disturbing phenomenon called OOPE.

Hotchkiss, Rous, Karmacharya, and Sangraula (1998)looked into the effects of a targeted public welfare initiative in a developing nation on their health expenditures and OOPE on health. They undertook a study in Nepal using National Health Survey Data and tried to find the effect of a social welfare initiative taken by the Government. They concluded that the initiative brought a change of twelve-fold in health posts (healthcare provider facilities). Earlier Households were using 5.5% of their total expenditure on health and about 74% of health expenditures were financed by OOPE. The study indicated that health expenditure and household setting in urban or rural area varied and urban was higher.

Pointing out in the same year, the lagging of Public Sector contribution, in a POLICY project study undertaken in state of Rajasthan by Sharma, McGreevey, Hotchkiss (2000) under the aegis of IIHMR and PPFGI indicated the meagre percentage of public spending out of the total expenditure. The study throws light on how at state level, Government of Rajasthan was contributing miniscule amount to public spending on RH. They also reveal that most of the expenditure is on reproductive tract infections and households are paying nine-tenths of it and Government only one-tenth. About four-fifths of RH expenditures is borne by OOPE and one-fifth by Government. Private providers charged about three times to Pubic providers and more than half the expenditure was on pharmacy bills. Reacting on similar lines like earlier study undertaken in Nepal byHotchkiss, Rous, Karmacharya, and Sangraula in 1998, they talk about financing of health spending being predominantly coming from private sector particularly households in the state of Rajasthan. Public spending is negligible. Policy makers should allocate more funds and work on more efficient use of the prevailing meagre funds.

Just like earlier study undertaken in Nepal byHotchkiss, Rous, Karmacharya, and Sangraula in 1998 which looked into the effect of a social welfare initiative by Government, once again in 2001, under the POLICY project, Sharma and Hotchkiss (2001) also described about the impact of Medicare Relief Societies in public facilities in the State of Rajasthan which were helping in their autonomy. Autonomy can be enhanced with monitored actions

like charging user fees and opening in-house pharmacies. The study analysed the findings from 69 public hospitals with 100 bed or more.

Further revelations were expressed under the same POLICY project the next year, Sharma, McGreevey, Kanjilal and Hotchkiss (2002) revealed that there was a discrepancy of expenditure by Rajasthan State Government between Health and RH. The Government was bearing the general health bill more than the RH bill and thereby, there was a bias in subsidies towards it. All spending that were crowding out private spending needed to be reduced.

Three years later in the same line the study by Xu, Evans, Kawabata, Zeramdini, Klavus, and Murray (2003)tried to find out whether massive OOPE was leading to catastrophic health expenditure (CHE). They undertook a multi-country analysis of 59 countries and tried to find out the incidence of catastrophic health expenditure (CHE) on marginalised people. CHE is the condition when health expenditures exceed 40% of annual income after meeting subsistence needs. They looked at the component of OOPE in health and the development stage of an economy and concluded that there is an inverse relationship between a nation's prepayment and public facility provision and CHE.

Another study in the same yearfollowing on the lines of the 2003 study of Xu, Evans, Kawabata, Zeramdini, Klavus, and Murray who argued that catastrophic health expenditure driven OOPE can be prevented by prepayment and public facilities provision, O'Hara (2004) concluded that OOPE and Medical Insurance have an inverse relationship in health expenditures. The author also revealed that the families were more likely to be impoverished if they had an elderly member or an ailing household member. Demographic characteristics influenced OOPE and medical insurance coverage is one important contributor via premium and co-payments but way more negative influencer if there is no coverage at all.

Another study conducted in the same year by Keehan, Lazenby, Zezza and Catlin (2004) looked at the correlation between age demography and health expense and concluded a direct relationship. Study looks into how an aging population might have a change in healthcare expenditure pattern using NHA data supplemented by household and provider surveys in US. According to them provider surveys are more reliable since it is not based on recall and are from better documented sources.

Working on OOPE and its correlation with poverty, Doorslaer etal. (2006) undertook a study of 11 Asian nations and analysed their household survey data by inclusion and exclusion of OOPE on healthcare. They measured the influence of OOPE on below-poverty line individuals and also on the poverty gap of households from the poverty line of US 1 $

per day. The poverty estimates came out 14% higher than reported by conventional studies on poverty which never consider OOPE on health as an indicator for poverty.

OOPE was the bone of contention and interest for another study undertaken this time in the Korean context by Ruger and Kim (2007). They revealed an inverse relationship between low income groups and their OOPE in Korea. The study used National Health Survey and after controlling socio-demographic variables looked at OOPE, OOPE burden ratio, healthcare utilization, health backgrounds and healthcare facilities availableand concluded that OOPE in Korea is regressive on marginalised people.

The following year, Leive and Xu (2008) undertook a cross-country analysis of 15 African countries and used regression analysis to understand the coping mechanism of OOPE in healthcare. They differentiated between selling assets and borrowing as one mode of OOPE and the other being, any other mode.Insurance was excluded. The findings showed 23-68% finance coming from the first mode leading to mass impoverishment.

Following in the same trend as reported by earlier studies on OOPE, Axelson, Bales, Minh, Ekman, and Gerdtham (2009) stressed on the need to introduce welfare programs especially targeting poor people and also provision of unemployment health insurance to reduce their OOPE. Their study looked at the possibility of achieving success of healthcare funds for poor in the span of a very short term.

Picking on similar lines as Hotchkiss, Rous, Karmacharya, and Sangraula in 1998, who looked at a social welfare initiative launched by the Nepalese Monarchy in Nepal, Galárraga, Sosa-Rubí, Salinas-Rodríguez and Sesma-Vázquez (2010)looked into the impact of Seguro Popular a Public Health Insurance Program of Mexico on catastrophic health expenditure and OOPE in a sample of rural Mexico. They called out for need of such Public welfare programs to protect against catastrophic health expenditures since the findings showed very favourable effects and which could be generalised at national level.

As revealed by the Hsiao, 1995 study in Chinese context, which concluded faulty Public policy leading to massive bills being footed on drugs, Saksena, Xu, Elovainio, and Perrot (2010) in their World Health Report, background paper using WHO survey 2003, tried to find out health spending and facilities of 39 low and medium countries. Private sector was also focused in the study since it was complementing public sector universally to provide equitable access to healthcare. Study throws light on how the burden of drug expenses was pushing the levels of OOPE even higher.

A longitudinal perspective was used to derive conclusions from the rich and affluent OECD countries during the time period of three decades starting from 1971 by Potrafke

(2010). In the study conducted of 18 OECD countries in the three decades between 1971-2004it was pointed out that public health expenditure levels and time for Elections in a country are very much correlated. The political parties used the election manifesto to fulfil their opportunistic needs and those promises were never fulfilled later. Everything was politicised and planning of health reforms were not based on any ideology but personal gains to cater to political pressures.

Prinja, Kaur, Gupta, Rana, and Aggarwal (2018) undertook a district level analysis of OOPE on health in the state of Haryanaand concluded that large sample primary data, consideration of secondary data of hospitalization and per capita expenditure on health are crucial to be kept in mind when planning and interpreting healthcare studies.

Multiple studies highlighted different factors leading to high individual healthcare expenditures. Sekhar (2006) and Pal (2012) compared the educational attainment levels and confirmed that there is an inverse correlation with OOPE. Chowdhury (2009) looked into Morbidity rate and concluded that there is a direct impact of it on the OOPE. Ghosh (2011) and Shahrawat and Rao (2011) concluded that expenditure on medicines and essential drugs were taking a toll on OOPE. Patil, Berad, and Angadi (2009) confirmed a direct relationship among socio-economic status and the healthcare expenditure amount. Mondal, Kanjilal, Peters and Lucas (2010) found a negative impact of repetitive hospitalization on lifestyle. Pal (2010) called for providing public health facilities in rural set-ups to bring down the household expenditure on healthcare.

2.4 Theme Dealing with Demand side of Health and Reproductive Health

Health like any other consumer good has a supply side and a demand side to it. Planners, Providers, Financiers and Policy makers need to strike an equitable balance in their focus among these two sides. The sides are complementary when it comes to providing marginal utility of costs incurred on healthcare. Costs needn't be in monetary terms but can be economic costs involving opportunity costs of healthcare seekers. Their demand for healthcare may be influenced by various demographical variables like medical background, access and convenience of health facilities, their own age, gender, levels of income and religion.

Marshall, Hays, Sherbourne, and Wells (1993) developed a tool to measure the patient satisfaction. They used a cross-sectional longitudinal method to develop this tool. The 2226 subjects were from the three cities of Boston, Chicago and Los Angeles and they were involved for four years to complete the research. The authors confirmed using structural modelling that there are six sub-domains of patient satisfaction each of which need to be

catered by the prospective providers. These sub-factors were found to be greatly influenced by the demographical background variation of the subjects.

Focusing on the factor of access and convenienceoffered by public facilities, Kumar, Dansereau, and Murray (2014) did an extensive study on the accessibility in terms of distance from health facility and the chances of institutional delivery probability. They found an inverse and high correlation between the two variables. Rural Indian women faced a challenge in terms of availing a health facility if the distance from the place of residence was far off due to added transport and attendant dependencies. Health facilities if available within 5 kms would increase the probability of institutional delivery chances by 10%.

In the same year, a study undertaken in the Kenyan context by Awiti (2014) did a thorough research on how poverty influenced demand for healthcare across four age-groups and concluded that poverty influenced the demand since it was affected by the household size and distance from the healthcare facility. It reduced the demand for modern healthcare. To increase the utilization of modern healthcare poverty reduction strategies needs to be looked into by policy makers.

A couple of years, later a study undertakenin the Indian context byChakraborty, Bhattacherjee, and Rahaman (2016) undertook a cross-sectional study in Darjeeling District in state of West Bengal, India, to find out the patient satisfaction levels in using public health facilities. The analysis showed that the demand could be broken down to categories of satisfaction levels in different domains pertaining to physical and human infrastructure. They also found out that the predictor variables of demography had a dominant influence on the demand for healthcare.

A report published in the same year by Deloitte (2016) Consumer Priorities in Healthcare Survey using a bracket method of 64 random set of statements, which elicited consumer's interactions with the prevailing ecosystem of health around them, revealed the most important rank ordered predictors of consumer satisfaction. They concluded consumers wanted personalization of healthcare by providers, economically manageable healthcare choices, accessibility every time, all the time and digital connectivity.

Stressing on the need for research to look into the demand side of healthcare,Tsegay et.al. (2018) in a cross-sectional study across Ethiopia concluded that policy makers and stakeholders were attaching undue importance to supply side healthcare but the demand side was craving for attention since the pattern of utilisation and factors influencing it need to be analysed and interpreted for structural modification by supply side. Supply side barriers had been talked about for decades but the Demand side had been neglected. Patients' satisfaction

if deterred, by these factors could reduce total healthcare utilization and even increase in private sector healthcare spending since that sector was investing a little more on such kind of required analysis.

2.5Flow of Research as Identified by the Themes of Literature Review

The first theme drives home the essence of the 'normative' dimension of the fact that there is a crucial need of health reforms to cater to the paradigm shift of health and especially reproductive health as a human right rather than a privilege. Now, in order to fulfil this, there is a need to rope in the private sector and revamp the existing public sector working in this direction. We have to look beyond the horizons of cities and urban dwellings and look towards those outskirts where majority of the people are marginalised in terms of awareness, capacity and access. In developing nations, the masses are subjected to settling for just sustenance and not satisfaction. Meticulous Planning needs to conform to this and apply the theories of optimal use of scarce resources and meet the twin objectives of equity and access along with justifiable room for business objectives to be fulfilled. Here comes the role of the public sector to provide, incentivise, subsidise, protect and monitor the entire sector. Transparency is a requisite which makes the sector eligible for aid and donations. This need is fulfilled by the second theme of literature.

The second thread of literature which catered to the documentation and categorization of contributions of each of the actors in their national context of health, is the bridge between the first theme of normative fact of providing health as a right and presenting the actual 'positive' fact of the economy's existing conditions so that the policy makers can comprehend the real scenario of health sector and analyse and interpret the steps that would be mandated to reach the normative stage. This brings in the third theme of literature.

This theme paints the actual picture from the consumer's side of the scenario. It discusses and brings out the real monetary problems faced by them, the factors influencing these problems and the outcomes experienced due to these problems. It describes the loss of the normative aspects deserved by them in the first theme in objective terms. This theme lays the platform for the last theme which would complement and complete the circle of literature.

So far, the first theme talked about what would be ideal for the consumers of health in an economy. The second theme discussed about what is actually happening in the economy in the present. The third theme presented the gap between the first theme and the actual achievement of an economy in this direction. It reflected the shortcomings of the first theme and used the second theme for showcasing this purpose in exact monetary terms.

The fourth theme brings in the consumer's perspective and voices their opinion as to what is that, they want, from the health sector of the economy. This theme consolidates and validates the other three themes for the policy makers to ponder and figure out strategies to be incorporated for the whole framework to successfully work and deliver.

2.6 Findings from the Literature Review

Public Health Expenditure is unsatisfactory compared to overall Public Expenditure. Public Health Expenditure in Reproductive Health is not documented and analysed well. Attention to RH well-being gets diluted because of over-emphasis on general healthcare like communicable disease and population control issues. Meticulous designing, planning and implementation is required and primary data collection has to complement secondary data available to fill, in the gaps of information. This becomes even more crucial since there is dearth of data that can be counted as dependable secondary sources.

Developing economies in transition stage have pluralistic sources of fund flows which can be captured best at decentralized levels. Capturing fund flows are best done at decentralized levels if all actors and their contributions are presented in the form of origin to destination matrices. Out-of-pocket expenditures OOPE in health and especially Reproductive Health (RH) has to be given priority attention. OOPE in RH should be contrasted to the overall OOPE in health. The variables identified by various studies as predictors of OOPE can be best analysed through construction of matrices and mapping the actors especially households in the backdrop of demographic variables.

Enormous amount of work has been done and yet we have not been able to accomplish the goals set by ICPD. The domain of health and especially Reproductive Health is characterized by multiple demand and supply related variables which have objective and subjective requisites. We have to,as nations incorporate a model, which includes a healthy mix of public and private sectoral components. Partnership relationship is still to be nurtured. Sustained aggregated efforts of research at micro and meso levels can underline the problems which are brewing at grass-roots levels. The findings of studies undertaken at local-levels, if based on sound macro-economic principles applicable at macro levels, can be used extensively by policy makers to usher in healthcare reforms.

2.7 Research Gap

The NHAscame into being since 1964 when USA, conceptualised it to portray its health expenditures system. Lazenby, Levit, Waldo, Adler, Letsch, and Cowan in 1992 traced its evolution over almost three decades and added that specialised satellite health accounts under NHA framework would be an excellent application of NHA.

Rannan-Eliya and Berman in 1993 called out transitioning economies to enhance application of household surveys by making them more realistic by creating satellite accounts so as to reduce information overload and recall bias of respondents. Berman in 1997 made similar appeals for satellite health accounts to developing economies to cater to their pluralistic health systems and inclusion of informal actors and their contributions.

Poullier and Hernandez in 1997, undertook an exercise of estimating NHAs in that year across the globe. There were a few countries which had institutionalised NHA and there were some which had initiated the process. India was among those pioneering nations who institutionalised NHA for its health sector. Countries taking such initiatives have to systematically document data, organise data sources, analyse and interpret in international standards for the sake of comparison and collaboration. It would also warrant the procedure to be periodically undertaken for analysing trends longitudinally. The study reported that among the South East Asian Region countries, India was spending 5.2% of GDP on health (public and private) and the OOPE was at an alarming rate of 84.6% of total health expenditure.

Under the POLICY project of 2000, Rannan-Eliya, Berman, Eltigani, de. Silva, Somanathan, Sumathiratne, and Rannan-Eliya used NHA framework method to compare between RH expenditures made by two different countries of Egypt and Sri Lanka covered under this same Project and revealed that the latter was ahead in RH since their system of finance was efficient. Under the same POLICY Project Sharma, McGreevey, Hotchkiss conducted a study to construct a RHA account in the state of Rajasthan and concludedthat the Rajasthan Government was contributing a meagre percentage into RH and there was prevalence of extremely high OOPE found out from the household survey which was undertaken in the district of Udaipur in the state of Rajasthan to validate their study.

Following on the footsteps of the POLICY project in the state of Rajasthan, another detailed joint study by Panchamukhi et al. in 2002, under the coveted Resource Flow (RF) project of CMDR and NIDI, to map a region before the construction of RHA, Karnataka as a state was chosen andmappedthoroughly for a comprehensive analysis of the existing health infrastructure prevailing in the region. Karnataka was chosen since it was lagging in RH indicators in the Southern region in India. Annigeri,a part of the RF Project, took this mapping process a step forward in 2003,and constructed a District Health Account for the district of Dharwad, in state of Karnataka.

Thus, from the literature review it becomes evident that there is a research need of contextual construction of RHA. It is best if constructed at all decentralized levels of

functioning. The state of Karnataka, a medium developed state in terms of RH indicators had been mapped by Centre for Multi-Disciplinary Development Research (CMDR), Population Resources Centre (PRC) and Netherlands Interdisciplinary Demographic Institute (NIDI) under the aegis of UNFPA/USAID/NIDI Resource Flow Project in 2002 for construction of RHA. Although many studies have been conducted to look into different aspects of RH healthcare, there hasn't been any consolidated effort towards constructing RHA at sub-district levels in Karnataka as a follow-up of the mapping process even after one and a half decades of the mapping process. There needs to be institutionalisation of RHA as stressed by Poullier in 1997 with relevance to NHA in his article. The author clearly mentioned in his global comparison of NHA study that institutionalisationis a must for systematic data availability process in all health accounting processes. Still, RHA hasn't been formally institutionalised in our country so far and the RH sector is still plagued by non-availability of data in public domain for researchers. Moreover, there is lack of documentation as to where to refer for meaningful data available in one place.

This follow-up sequence has not materialised constructively in the case of Karnataka mapping process to produce RHA. Especially, the ever-expanding private sector dominated by households who double up as financing agents and financing sources has not been tapped for its full potential as a data source. There are not many reported works looking into the RH system focusing on the Household finance of this sector. OOPE in RH has been referred to in the literature review multiple times with a lot of caution and stress. This study is a modest effort to fill in this gap of research.

Moreover, to the best of knowledge of the researcher, notmany studies have so far tried to look at both the Supply side of RH and also review its Demand side (consumer/patient satisfaction). Marshall, Hays, Sherbourne, and Wells in 1993 stressed on looking at the various domains of satisfaction for understanding the expectation side of consumers derived from the health providers which constitutes the Demand side of health. In recent years using one of their six demand domains Kumar, Dansereau, and Murray in 2014 concluded that accessibility and chances of institutional births are positively correlated in Indian context. Awiti in 2014, revealed that socio-economic demography influences consumer demand for healthcare utilisation. Chakraborty, Bhattacherjee, and Rahaman in 2016 stressed on consumer's choices being driven by health facility's infrastructural quality. Deloitte Report, 2016 concluded thatconsumers wanted personalization of healthcare by providers, digital connectivity, economically manageable healthcare choices, accessibility every time, all the

time. Tsegay in 2018 reminded that supply side is overemphasized, its high time that policy makers and researchers should look into the Demand side of health as well.

This study is a sincere attempt to bridge this gap and bring the two important sides of health, its supply as well as its demand,together, in understanding the complexity of financeinvolved especially in the sector of reproductive health.

3.Methodology

3.1Research Problem

Governments are tied up to meet various objectives and are unable to supervise and cater to local and specific domain needs like Health care and further subdomain needs like Reproductive Health (RH) care. Health sector is focusing more on contagious and terminal disease control and less on RH so funds are being diverted away.

Multiple actors (Financiers, Agents, Providers, Users) are involved between framing of the objectives, allocation of funds and the realization by final beneficiaries. It involves a complex process because of involvement of so many actors and thus calls for tracking of funds.

There is a crucial need to develop tools to measure and monitor movement of funds across the dimensions of these various actors so that there is no wastage or inequitable use of limited funds. “Mechanisms should be set up at the state/regional level to generate periodic (say 3-yearly) dis-aggregated district-level data in accordance with uniform protocols for ease of comparability across states” according to National Institution for Transforming India (NITI).Developing Reproductive Health Account (RHA) matrices at sub-district level is one such enabling tool in this direction.

Demand side of reproductive health is often overlooked and the supply side is over-emphasized leading to policies neglecting consumer satisfaction. The problem has to be carefully comprehended by having an overview of both the sides to be able to present a meaningful picture.

3.2Research Questions

The need for construction of RHA matrices as satellite accounts of NHA were indicated by many studies at international and national level. It was further stressed that studies undertaken at sub-national level would enhance the understanding of the needs of finance involved in the RH sector even better. Such deeper understanding of actors keeping in mind, both the demand and the supply side involved, would help frame local public policies better in order to accentuate RH at these levels. A strong base at grass-roots level would further the

benefits at higher levels. In the backdrop of this scenario, the following research questions were framed as the baseline for this study:

1. How is health in general and reproductive health in specific being financed?
2. Who is paying how much, into which schemes, to which providers at what levels and for what functions?
3. How are the resources of healthcare being managed and by whom?
4. Who are the final beneficiaries from the expenditures incurred on health in general and reproductive health in specific?
5. To what extent the supply of health provisions meeting the demand for it?

3.3Research Objectives

Based on the above-mentioned research guiding questions the following research objectives were framed:

1. To construct four origin (Financial Source) to destination (Health Function) matrices capturing use of funds between four key actors (Financial Sources, Financial Agents, Health Providers and Health Functions) involved in the RH sector finance, based on NHA methodology, contextualised for sub-district level.
2. To find out the share of Public spending compared to Individual Out-of-Pocket spending in overall reproductive health expenditureand to examine thepercentageof Out-of-Pocket spending in reproductive healthcompared tothat of spending in General Health.
3. To examine the supply readiness of public health facilities at primary, secondary and tertiary level of health provision and to analyse the factors influencing the Demand side,from the Consumers of the RH sector.

3.4Conceptual Framework of the Study

The various themes of the literature reviewhighlighted the normative and positive aspects of supply and demand involved in the sector of health. Predominantly, on one hand there was a need to understand the roles of various actors participating in the finance of this sector. On the other, these roles were again influenced by multifaceted factors, some of them economic and some demographic. To get a holistic overview, the system of healthcare, especially reproductive healthcare needs to be focused from supply and demand sides.

Based on the above understanding, this study derived its design from three frameworks. Firstly, the framework provided by National Health Accounts (NHA), India, 2013-14. Secondly, the framework given by World Health Organization (2009), in Guide

to producing Reproductive Health Subaccounts, within the National Health Accounts Framework. Finally, the framework provided by the structural model of satisfaction derived from medical care given byMarshall, G. N., Hays, R. D., Sherbourne, C. D., & Wells, K. B. (1993).

The first framework contributed to this study design by lending the structure of matrices to understand the tri-axial system of consumption, production and finance of general health in the sub-districts of Karnataka. It helped the design by identifying the participating actors specific within the local context. This framework formed the basis of the General Health Account which was constructed to understand the ratio of health expenditures in general health compared to RH.

The second framework helped design the RHA customised to the study setting. The sources, schemes, provides and beneficiaries were easily identified once the RH functions were understood from the framework. Data was collected accordingly and analysed as per the inference drawn from the guide. This formed the basis of the main study design.

The third framework helped design the Demand side of the study as well as in triangulation of the study. It assisted in administration, analysis and interpretation of the patient satisfaction aspect and validate the information collected from households for the construction of RHA matrices.

The three frameworks are pictorially represented below:

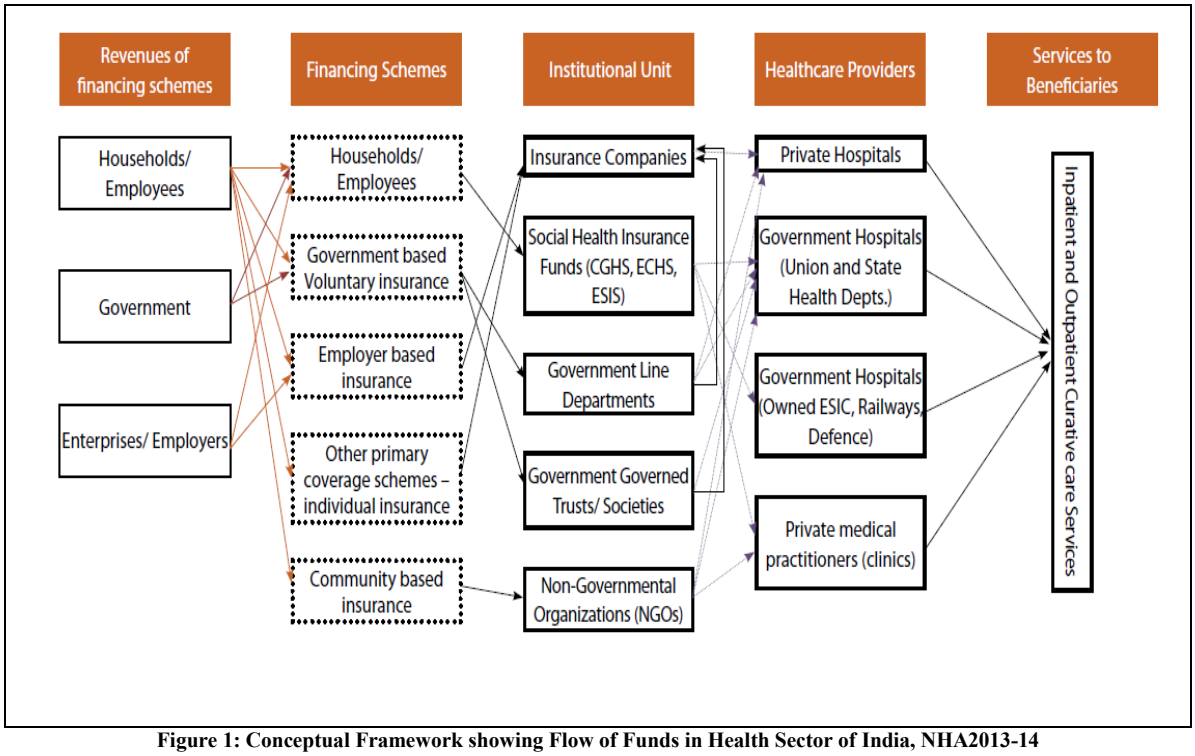


Figure 1: Conceptual Framework showing Flow of Funds in Health Sector of India, NHA2013-14

The figure above shows that there is a complex movement of funds among the various actors involved in the health sector, including both private and public sector stakeholders. The actors are typically financial sources, agents, health providers and services provided to beneficiaries.

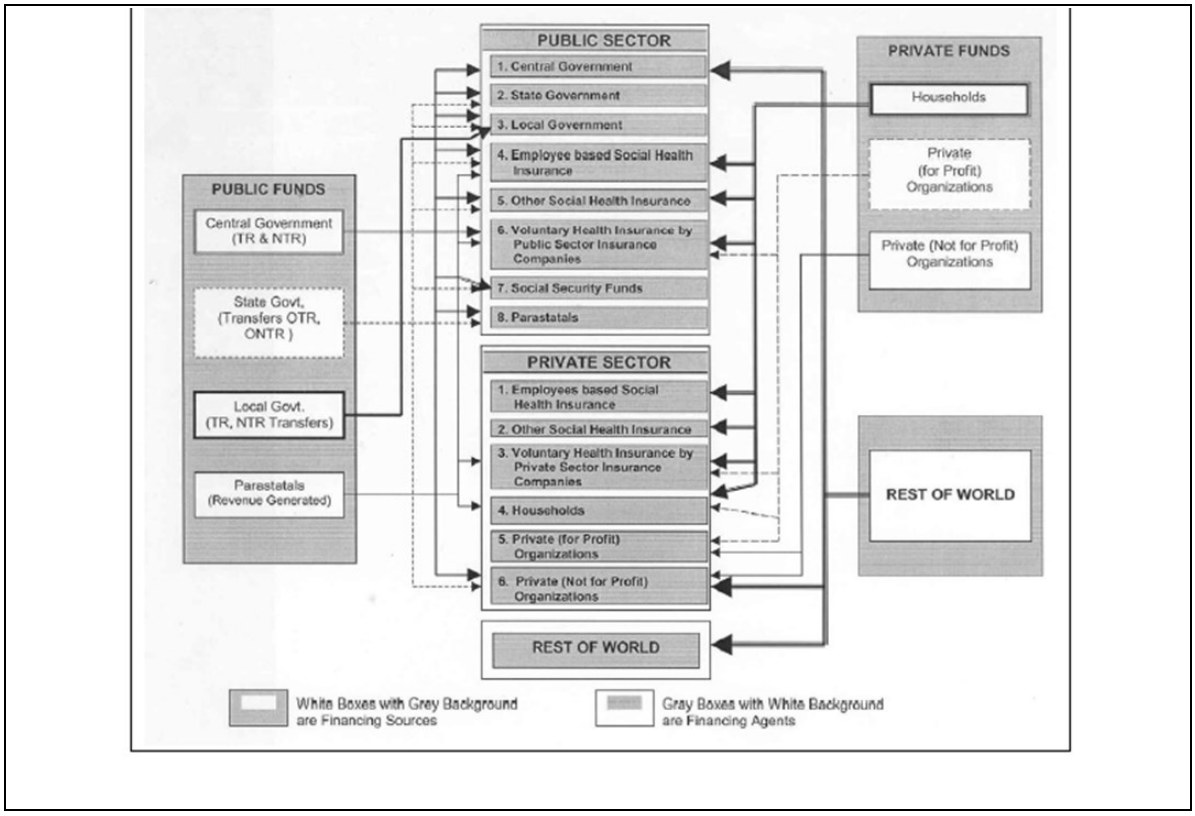

PUBLIC SECTOR
1. Central Government
2. State Government
3. Local Government
4. Employee based Social Health Insurance
5. Other Social Health Insurance
6. Voluntary Health Insurance by Public Sector Insurance Companies
7. Social Security Funds
8. Parastatals
PRIVATE SECTOR
1. Employees based Social Health Insurance
2. Other Social Health Insurance
3. Voluntary Health Insurance by Private Sector Insurance Companies
4. Households
5. Private (for Profit) Organizations
6. Private (Not for Profit) Organizations
REST OF WORLD
PUBLIC FUNDS
Central Government (TR & NTR)
State Govt. (Transfers OTR, ONTR)
Local Govt. (TR, NTR Transfers)
Parastatals (Revenue Generated)
PRIVATE FUNDS
Households
Private (for Profit) Organizations
Private (Not for Profit) Organizations
REST OF WORLD
White Boxes with Grey Background are Financing Sources
Gray Boxes with White Background are Financing Agents

Figure 2: Conceptual Framework as provided by WHO, 2009 Guide for Producing RH subaccounts based on NHA

The figure above shows similar complexity of fund movement as in the domain of General Health and the actors involved are very similar, only difference is that this framework is RH domain specific.

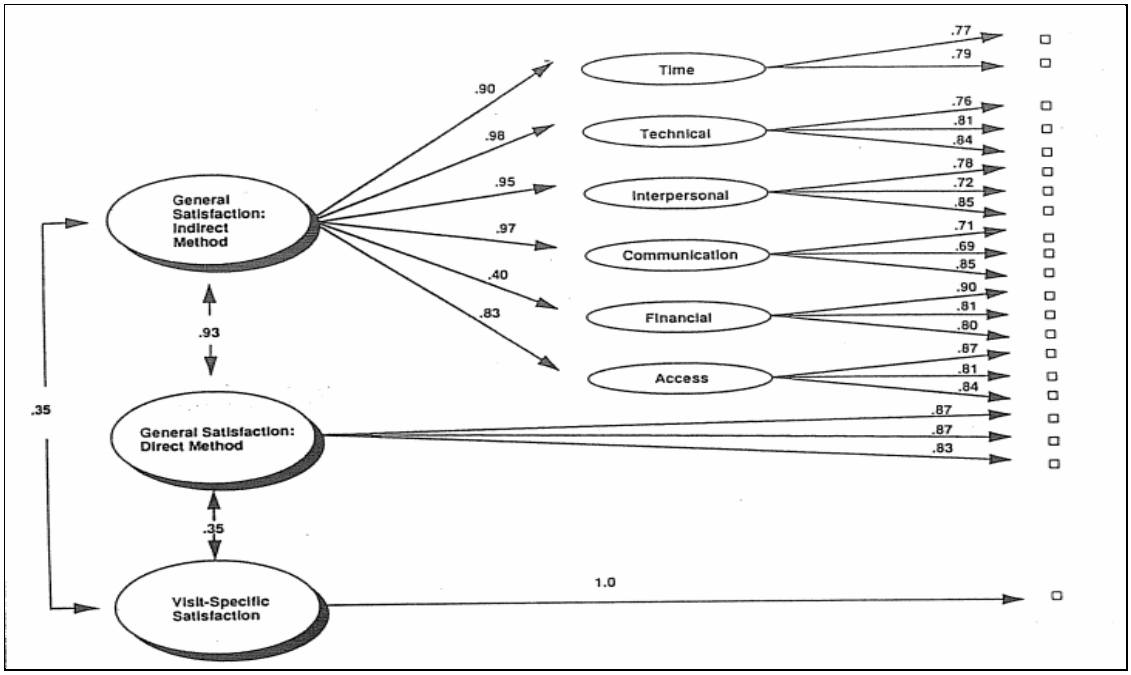


Figure 3: Conceptual Framework as provided by Marshall, G. N., Hays, R. D., Sherbourne, C. D., & Wells, K. B. (1993). The structural model of satisfaction with medical care.

The figure above shows the Demand side of consumer's (patients) towards healthcare utilization. It is captured by their satisfaction levels attained. It is composed of factors like time, technical quality, interpersonal, communication, financial aspect and access.

3.5Theoretical framework of the Study

AICPA (American Institute of Certified Public Accountants) summarises 'Accounting' as a process of recording, classifying and summarising all transactions and events amenable under having a financial character in monetary terms. Health accounts refer to such events/transactions done for health purpose in a particular economic territory so it comes under meso-economic accounting which falls between macro and micro economic accounting.

3.5.1National Income Accounting

The framework for national accounting uses double entry book-keeping method which helps to track fund flows which are incoming and ones which are outgoing. When applied to specific sectors it shows inter-relationships between actors and to the sector as a whole. By illustrating that the expenditures of one sector/actor show up as income elsewhere, this framework offers a way to cross-check the estimates.

3.5.2The System of National Accounts

The SNA provides concepts, definitions, classifications and accounting rules to provide a comprehensive framework for analysing production, investment, income and stocks and flows of financial and non-financial assets in the economy according to OECD.The SNA can be viewed as consisting of three sub-accounts: current accounts, accumulation accounts and balance sheets, of which the first is of interest here.

3.5.3Satellite Accounts

Satellite accounts take off from the SNA by focusing on the *purpose* or *function* of transactions. Thus, transactions in the economy are first analysed in the SNA according to their characteristics. Then, certain types of transactions (such as health care) are analysed from the expenditure side. In satellite accounts, therefore, the unit of analysis to which classification is applied is not an establishment (as in national accounts) but, instead, is *transactions*, or groups of transactions.

They deal with economic activities that in the central framework are traced in a non-exhaustive or a non-explicit manner, or they make a complete analysis of the economic or social functions that appear only partly in the central framework. It allows treatment of

specific sub categories of main categories included in SNA with flexibility of applying rules not possible in central framework (Lemaire, 1986). It is a structuring instrument of both the corresponding information system, mainly in its monetary part, and the associated physical data since it supplies integrating elements from the central framework (Weber, 1983).Satellite accounts answer three fundamental questions namely who finances, who produces,with what means of production, what is the result of the expense and who receives the benefit. To answer these, it uses the tool of matrices which work on double-entry book keeping method. (Pierre Teillet, 1988)

3.5.4General principles of Accounting

Within the health accounting framework, the underlying principle may be formulated as 'what is consumed has been provided and financed' (NHA guide India, 2016). To achieve the tri-axial perspective of consumption, provision and finance, consumption measurement is the starting point. NHA boundaries are also based on consumption purpose. SHA recommends using 'current expenditure on healthcare' and 'gross capital formation' as the basis of calculation rather than using aggregates like Total Health Expenditure (THE). *Current expenditure on healthcare is defined as* final consumption expenditure of resident units on healthcare goods and services. *Gross capital formation* in the healthcare system is measured by the total value of *assets* that providers of health services have *acquired* during the accounting period (less the value of disposals of assets of same type) and that are used repeatedly or for more than one year in the provision of health services (SHA, 2011).

SHA also recommends two elements for recording the final consumption expenditure. One is fiscal year versus calendar year and accrual versus cash accounting. India has chosen *fiscal year* (1st April to 31st March) and *cash accounting* that means 'actual expenditures'. Healthcare expenditure in India includes 3 things *namely OOP on outpatient and inpatient at public/private health facilities and pharmacies, all Government expenditure on health programs, disease control, RH and finally heath administration, health insurance and medical benefits to employees by public/private entities.*

3.6 Theories of Economics in Healthcare Relevant to this Study

i. *Uncertainty, Risk and Healthcare Markets*: The theory of uncertainty and risk was propounded by Keynes and Knight. Applied in health Economics it means from the seekers side, it involves both uncertainty and risk. This calls for Insurance coverage. In this study, the households and individuals who had the ability to pay and information awareness due to better educational levels had shown higher insurance coverages.

ii. *Information Asymmetry*: George Akerlof, Michael Spence, andJoseph Stiglitz propounded this theory. In health, social welfare schemes initiated by Government are often not adopted due to information asymmetry. Also, over treatment happens due to intentional and unintentional reasons which requires control and monitoring. The study used this concept to understand the logic that households and individuals who had similar health needs and financial status were still spending in different manners on healthcare.

iii. *Occupational Licensing and Monopoly*: Milton Friedman introduced the occupational licensing concept in health. Safeguarding consumer's interests calls for practicing under license for staff and providers increasing the supply costs and inducing barriers to entry. This concept was used to understand the higher costs involved in tertiary consultation and also shortage of specialist medical officers in public facilities.

iv. *Public Goods and Externalities*: Paul A Samuelson propounded the concept of public goods and Marshall followed by Pigou coined the concept of externality. Healthcare especially in prevention of communicable diseases improves health and related temperament of by-standers as well. This study used this concept to analyse the importance of preventive care especially in pregnancy and neo-natal healthcare utilization.

v. *Derived Demand, Complementarity and Equity*: The Derived Demand concept is similar to joint demand or demand for complementary goods. It was introduced by Alfred Marshall.Healthcare's a derived demand since it complements for enjoying other pleasures of life and productivity. Equity concept was introduced by J Stacy Adams. It stresses on the fact that the marginalised who have least ability to pay need it most. This study had used this concept to compare the income levels of households and their healthcareutilization.

vi. *Demand and Supply for Healthcare Goods*: The concept of demand and supply was introduced by Marshall. Healthcare being a derived demand often requires third party payers leading to excess demand and over treatment. This theory was used to understand the possibility of an increased incidence of caesarean delivery cases in pregnancy patients with insurance coverage but had no medical background of prior complication or history. Moreover, social welfare schemes need to supplement group insurances.

vii. *Price and Income Elasticities*: Propounded by Marshall this concept is applied in Healthcare. Health has a low Price and higher than one Elasticity of Demand.

Providers encash this to sell basic health packages. In transitioning economies, supplier's induced demand is of concern. Expensive services will lead to underutilization and too cheap will make demand via insurance huge. Moreover, in this study, this induced demand from suppliers was seen in cases where there was a time constraint in individuals working on daily wages who were recommended expensive treatments against false promises of faster recovery. In some cases, they were induced to certain reproductive health procedures (in fertility issues) which were costly and the healthcare seeker was less informed but had willingness and ability to pay.

viii. *Supply, Costs and Economies of Scale*: Roegen and Kaldor coined the term 'economies of scale'. Some capital expenditure hint at economies of scale being useful to cut down costs like Radiology, Laboratory and Surgical equipment. This concept was used to defend the shortage of recommended individual infrastructure in primary public healthcare facilities which were in very close proximity to secondary care facilities who had better infrastructure.

ix. *Optimal Level of Health Spending*: If value of benefit of healthcare is lower than benefit derived from other consumption services from the marginal money spent, it indicates health spending is too low and funds should move in to health sector. This concept had been used to point out the extremely low levels of public spending in comparison to private healthcare expenditures.

x. *Financing Prevention and Health Promotion*: Health Promotion via advertisements or awareness is more likely to increase the urge for investing in healthcare services since most people live beyond economically productive years and are likely to incur heavy healthcare costs later. This idea was used for suggesting policy recommendations about need for broader information dissemination.

xi. *Financing Healthcare Services*: Fair amount of efficient competition among financiers or social welfare schemes leads to cost reduction to a certain extent but beyond which it might result in problem of adverse selection where there are subtle strategies adopted for deterring the elderly and poor not to join these schemes. In this study it was used to understand the difficulties faced by women who were considered as being non-eligible for availing child-birth incentives because the clause was up to two live births which was although well intended, for limiting family size.

3.7Healthcare Boundaries of Classification according to SHA, 2011

Framework should include expenditures on the following activity groups: health promotion and prevention, diagnosis, treatment, cure and rehabilitation, Palliative care, providing community health programs and governance and administration of the health system. Health-related activities that aid but do not belong to healthcare functions are excluded. Only activities related to current consumption are considered.

3.8Reproductive Healthcare Boundaries of Classification according to RHA, 2009

Following the general guideline by WHO on setting the boundary of national health accounts (WHO, 2003, p. 20), and WHO producer's Guide on RHA, 2009, the boundary of the RHA is determined by (i) a set of activities that are related to reproductive health, (ii) space (geographical frontier) and (iii) time.

3.8.1Activity boundary

Activities of RH care include promoting reproductive health and preventing reproductive health related disease, curing reproductive healthrelated illness, reducing maternal mortality, nursing care for persons with illness or impairment that are related to reproductive health, providing and administering reproductive health service and programmes, including those for family planning and HIV/AIDS.

3.8.2The time boundary

Most often this is a fiscal year or a calendar year. Government entities often report spending on the basis of a fiscal year while private entities report on the basis of a calendar year. The WHO manual includes procedures to adjust the time frame to assure comparability. The second element of the time boundary is the distinction between the activity and the transaction that paid for the activity. Funds may be released in a year that is different from the year in which the activity takes place. In *cash accounting*, expenditures are registered when the actual cash disbursement takes place. In *accrual accounting*, expenditures are registered when the actual cash is being used. The manual recommends the accrual method, meaning expenditures are attributed to the time period during which the economic value is created (by activity taking place).

3.8.3The space boundary

This includes spending on and by all residents of a particular country, including expenditure by external agencies on inputs to RH care within the country or region of context.

3.9Methodology of Constructing Health Accounts Matrices

On the basis of the data collected from both primary and secondary sources it is proposed to construct the matrices for reproductive health accounts in the district of Ramanagara following the guidelines outlined in the manual *'Guide to Producing National Health*

Accounts' (WHO 2003). The health accounts matrices are tables displaying various aspects of the health system. The tables serve two purposes. One is to display estimates of health expenditures in a way that can be linked to fundamental policy questions and objectives.

The basic questions relate to how resources are mobilized, managed, distributed and used. The other purpose is to facilitate the estimation process itself. The tables or matrices that constitute the health account include the actors: financing sources, financing agents, providers and inputs/functions. Each of the System of Health Accounts (SHA) tables display some facet of health expenditure cross-tabulated by two or several of the dimensions of health expenditure.

The WHO (2003) guidelines recommend two-dimensional tables involving two dimensions only. One of the dimensions can be thought of as the 'origin' of the funds and the other dimensions as the 'destination' or 'use' of funds. By conventions, the origin dimension is shown as columns in the table and the destination dimension is shown as rows. A row is denoted by *'i'* and a column by *'j'*. The (*i, j*) cell of the table shows the amount of resources spent by *'j'* on *'i'*. There are resources that originate in *'j'* and are used by *'i'*. Table illustrates a typical matrix.

Destination (Use of funds)	Origin(Source of funds) Origin 1 Origin 2 Origin 3 . . . . Origin n	Total
Use 1 Use 2 . . Use m Total	(*i, j*)	

3.10Methodology of Constructing Reproductive Health Account Matrices

WHO suggests use of RHA Manual, 2009 to construct RHA as sub-accounts of NHA in different nations based on their individual needs and objectives. RH sub accounts consist of two-dimensional origin to destination tables in the form of matrices which are similar to NHA tables in terms of actors and organise information on reproductive health specifically. Following NHA framework makes it consistent, comparable and compatible to national guidelines.In the present study, four basic Reproductive Health Account matrices are proposed to be prepared and consequently the following tables constitute a minimum set:

I. Health expenditures by type of financing sources and financing agents (FS x FA)

This table highlights resource mobilization patterns in the field of health. It addresses the question 'where does the money come from' by showing the sources of funds received by the financing agents. In this study, FS has been delimited to State Government, Central Government, Private Insurance Companies, Private enterprises, Money Lending Institutions and Households. There was no recorded donor or aid agency in the study area from where funds flowed in. These sources were chosen as these were the only sources reported in the sample and these were the only amounts which were going forward to the Financing Agents in the matrix for accounting purpose.

II. *Health expenditures by type of financing agent and health providers (FA x HP)*

This table shows how funds are distributed across different types of providers. It answers the question 'who finances whom' in the health system. The information can be used for cost-effectiveness analysis. In this study, FA has been delimited to Yeshasvini, ESIC, CGHC schemes under public sector social welfare domain, Private individual/Household Insurance, Private Group Insurance and Household domains under private sector. These agents were chosen as these were the only agents reported in the sample and these were the only amounts which were going forward to the Health Providers in the following matrix for accounting purpose.

III. *Health expenditure by type of health providers and health functions (HP x HF)*

This table shows how funds for the different inputs or resource costs are channeled through the various types of providers. It answers the question 'who does what', i.e. who accounts for a particular activity. In this study, Health Providers have been delimited to Public and Private Providers operating at Primary, Secondary, Tertiary, Radiology/Pathology and Pharmacy Level. In this study, Health Functions have been delimited to six domains of RH disorder related, Pregnancy related, Neo-natal related, Family Planning related, Abortion and Miscarriage related functions on which expenditures were incurred.

IV. *Health expenditure by type of financing agents andhealth functions (FA x HF)*

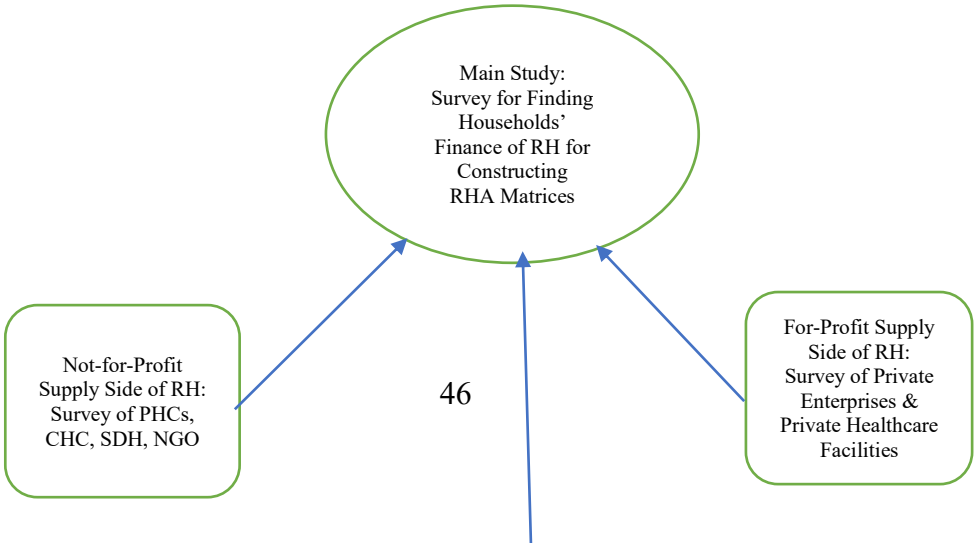
The table is used to describe the allocation of resources to the major types of health activities. It answers the question who finances the various activities in the field of health? What activities are funded by the central government, state government and local government? What activities are funded by the private sector? (including households' out-of-pocket expenses, private institutional expenses, corporate sectors and NGOs).

3.11Constructs and Variables

*Reproductive Health Fund Flows:*The fund flows means fund movement among the actors involved in the RH sector captured by measuring expenditures incurred by these actors. Quantitative continuous ratio variables used to measure were expenditures by financial sources, expenditures to financial agents, expenditures athealth providers indifferent levels, and expenditures on different RH functions.

1. *General Health Fund Flows:* The fund movements among the actors involved in the Health sector captured by measuring expenditures incurred by these actors. Quantitative continuous ratio variables used to measure were expenditures by financial sources, expenditures to financial agents, expenditures at health providers in different levels, expenditures on general health function.
2. *Public Health Faciliies' Compliance:* Compliance is a conforming procedure to a set of prescribed guidelines. Here, compliance is matched to Indian Public Health Standards (IPHS) guidelines prescribed for PHC, CHC and SDH. Measurement of compliance was done by using qualitative and quantitative variables of manpower, infrastructure, services, quality monitoring and behavioural compliance.
3. *Patient Satisfaction:* Satisfaction is a subjective attribute. Here, it was related to patients being consumers of public healthcare. Patient satisfaction was measured using ordinal variables like general spurposeatisfaction, technical quality, interpersonal manner, financial aspect, time spent with doctor, communication, accessibility&convenience and lastly overall satisfaction. These ordinal variables were transformed into scaled variables for analysis. These scaled variables were contrasted against categorical variables of gender, age, religion, educational level, income level, medical background, type of visit, frequency of visit, insurance coverage, employment type and distance of residence from healthcare facilities.

The Survey Design of the Study



3.12 Operational Definitions of Variables

(Borrowed heavily from the WHO, 2009, Guide to producing RHA)

1. *Financial Sources*: These are those actors (entities) that provide funds to the Financial Agents of the health system (here reproductive and general health systems) within the health account boundary. In this study, Financial Sources considered under Public Sector were State Government and Central Government. Financial Sources considered under Private Sector were Private Enterprises and Insurance Companies, Households, For-Profit Money Lending Institutions, Not-for-Profit Donors and External Aid Granting Institutions.
2. *Financial Agents*: These are those actors (entities) that receive funds from the Financial Sources and channel these funds for payment of health services to the Health Providerswithin the health account boundary. In this study, Financial Agents considered under Public Sector were Yeshasvini Scheme by Department of Cooperation, Government of Karnataka, Employees State Insurance Scheme by Employees State Insurance Scheme Corporation (ESIC) and Central Government Health Scheme by Ministry of Health and Family Welfare (CGHS). The Financial Agents considered under Private Sector were Individual Voluntary Insurance Companies&Group Insurance Companiestogether with Households acting as Financial Agents providing Out-of-Pocket Expenditures to Health Providers.
3. Health Providers: These are those actors that receive funds from Financial Agents and use it for providing Health Functions (Services)within the health account boundary. In this study, Health Providers considered were providers operating at Primary, Secondary, Tertiary, Diagnostics & Radiology and Pharmacy levels, both in Public and Private sectors.
4. *Health Functions*: These were those actors (entities) on which the funds from the Financial Agents, channelized through Health Providers, were spentwithin the health account boundary. These were the services on which expenditures are made by the Financial Agents and they were being provided to the beneficiaries by the Health Providers. Beneficiaries were the actual final consumers of the health systemwithin the health account boundary. In this study, Health Functions included Reproductive Health Disorders, Pregnancy, Neo-natal, Family Planning, Abortions and Miscarriage.

5. *Compliance*: Compliance generally means adhering to guidelines prescribed for the entity. Compliance, here in this study refers to the conforming of Public Health providers at different levels (primary, secondary and tertiary), to the guidelines prescribed by the Indian Public Health Standards (IPHS) at those specific levels. The Providers considered here for compliance measurement were typically Primary Health Centres, Community Health Centres and Sub-District Health Centres.
6. *Patient Satisfaction*: Patient Satisfaction is a derived demand. This demand is derived from the satisfaction of services received from the Health Providers. Services are the Health Functions related treatments for which visitations are made. In this study, Patient Satisfaction included General, Technical Quality, Communication, Interpersonal, Financial, Accessibility and Convenience satisfaction related as prescribed by the standardized tool that was used to measure Patient Satisfaction.

4. Main Study Design

Cross sectional household survey study design was adopted for estimating RH expenditures by various actors involved in sub-districts of Chennapatna and Ramanagara, state of Karnataka.

4.1 Data Collection

Sample size of Households (HH) was chosen using Household Survey Calculation method as recommended by United Nation's, Department of Economic and Social Affairs Statistics Division:

$$n_h = (z^2)\ (r)\ (1\text{-}r)\ (f)\ (k)/(p)\ (\check{n})\ (e^2)$$

where

n_h is the parameter to be calculated and is the sample size in terms of number of households to be selected;z is the statistic that defines the level of confidence desired;r is an estimate of a key indicator to be measured by the survey;f is the sample design effect, *deff,* assumed to be 2.0 (default value);k is a multiplier to account for the anticipated rate of non-response;p is the proportion of the total population accounted for by the target populationand upon which the parameter, r, is based;ňis the average household size (number of persons per household);e is the margin of error to be attained.

Recommended values for developing economies' household surveys by United Nation's, Department of Economic and Social Affairs Statistics Division are: z statistic=1.96 for 95% level of confidence, k=10% for developing economies, ň=6, e=10% of r. Putting the

recommended values, the formula reduces to:n_h = (84.5) (1-r)/ (r) (p). It is decided that the main survey indicator to measure ň is the Household Reproductive Health Expenditure which is thought to be about 20% of the Household General Health Expenditure and Household General Health Expenditure is about 68% of Total Health Expenditure. In this case, r = 0.2 and p = 0.68. (based on 2013-14 Household Expenditure Data of NHA and Hospital survey feedback of researcher). The sample size is calculated at 497. Keeping a conservative estimate, 519 HH were selected.The specific households were chosen in simple proportion to the total number of households in all the villages and towns of these two sub-districts as provided by the District Census Handbook, Ramanagara, village and town wise Primary Census Abstract (PCA) Abstract, 2011. For convenience, required number of households adjacent to each other were chosen in each locality. Data was collected during the period starting from June 2018 to May 2019.

The survey tools of Household Questionnaire, Men's and Women's questionnaires catering to Household Profiling, Household Member Profiling along with the Expenditures incurred on RH, Pregnancy, Neonatal, Family Planning, Abortion and Miscarriage issues was taken from the 'WHO Guide to produce RH Sub-Account' for collecting data covered curative, preventive, rehabilitative, palliative, ambulatory and psycho-social support for in-patient and out-patient health expenditures incurred at various health provider levels including patient and attendants' expenditures on consultation, drugs, radiology, dietary supplements, accommodation charges, food and transport.Similar counterpart information was collected on general healthcare expenditure incurred during the same time period.

4.2Statistical Analysis

Secondary data was collected, about the share of public expenditure in terms of premium and coverage, from respective websites of Yeshasvini, ESIC and CGHC schemes. Secondary data was also collected from ESIC website about the private employer and employee share of contribution and from the CGHC website for share of employee contribution. Data was also collected about existing general health, mother and child health schemes in Karnataka. Similar data was also collected about the District of Ramanagara.

The secondary data sources were as follows:

i. Yeshasvini information about premium and coverage:
   Accessed from:
   http://mdindianetworx.com:92/ ; http://sahakara.kar.gov.in/faqYesh.html
ii. Yeshasvini Procedures with costs:
   Accessed from: http://mdindianetworx.com:90/ProceduralForm.aspx

iii. Yeshasvini Scheme Review: Accessed from: https://iphindia.org/project/yeshassvini/

iv. ESIC information about premium and coverage: Accessed from: https://www.esic.nic.in/

v. ESIC annual Report 2017-18:Accessed from: https://www.esic.nic.in/attachments/publicationfile/5a25e85211f3e0ec069a009f2c3c43fa.pdf

vi. ESIC rate list of procedures 2019: Accessed from: https://www.esic.nic.in/CIRCULARS/RSBYmedRates120711.pdf

vii. CGHS information about premium and coverage: Accessed from: https://cghs.gov.in/

viii. CGHS rate list 2014 onwards (Bangalore region): Accessed from: https://cghs.gov.in/showfile.php?lid=4342

ix. CGHS empanelled hospitals and rates (Bangalore region): Accessed from: https://www.cghs.nic.in/reports/view_hospital.jsp

x. Information about Karnataka Mother and Child Health Schemes: Accessed from: https://www.karnataka.gov.in/hfw/nhm/pages/mh_schemes_thayibhagya.aspx

xi. Information aboutReview of Mother and Child Health Schemes: Accessed from: https://accessh.org/wp-content/uploads/2014/07/Thayi-Bagya-Scheme1.pdf

xii. Information about Ramanagara District Mother and Child Health Schemes: Accessed from: https://ramanagara.nic.in/en/health/

xiii. Information about General Health Schemes in Karnataka: Accessed from: https://www.karnataka.gov.in/hfw/kannada/uhcdocuments/Arogya%20Karnataka%20GO%20Eng%20Final%203.30%20pm.pdf

xiv. Information about Public spending: Health Sector Financing by Centre and State/UTs in India (2015-16 to 2017-18), compiled by National Health Accounts Cell, MHFW, GoI

Secondary and primary data was recorded, analysed and formatted into Excel for reporting.

4.3Ethical Consideration

Institutional Ethical Clearancewas taken before conducting the survey. Households were informed of the purpose of the survey. It was conveyed to them that individual anonymity of

data would be maintained and aggregated data would be used for the purpose of this study only. Verbal consent was taken from the head of the households. Each member of the household who had sought reproductive healthcare and incurred expenditure in the last financial year (April 2017-march 2018) were interviewed. Minor and illiterate members were interviewed in the presence of another adult family member. Members who were hesitant to answer and wanted to provide information through another member were allowed to do so. Keeping in mind the sensitivity of the topic and its personal nature, respondents were given sufficient time and space to reflect, recall and provide the relevant information in the comfort of their households.In certain circumstances, repeated visits were made to finish the interview sessions.

4.4Findings

Table 5

Matrix FS X FA: Captures the flow of funds from Financial Sources to Financial Agents

	FS X FA	**Financial Sources**				
		FS.1 Public Funds				
	Financial Agents	FS.1.1. State Government			FS.1.2 Central Government	
		FS.1.1. State Government contribution to Yeshasvini premium for SC/ST 1	FS.1.1.2 State Department of H&FW towards Yeshasvini Coverage 2	FS.1.1.3 State Department of H&FW towards 12.5% ESIC coverage 3	FS.1.2.1 Central Government Ministry of H&FW towards 87.5% ESIC coverage 4	FS.1.2.2 Central Government contribution towards CGHC coverage 5
FA 1.1	FA.1.1.1 Yashasvini Scheme	11,800				
	FA.1.1.2 Yashasvini Medical coverage		1,60,081			
	FA.1.1.3 ESIC Scheme					
	FA.1.1.4 ESIC Medical coverage			8,595	60,170	
	FA.1.1.5 CGHC scheme					
	FA.1.1.6 CGHC Medical coverage					1,72,669
FA.2.1	FA.2.1.1 Private Individual Insurance companies					
	FA.2.1.2 Individual/Household Medical coverage					
FA.2.2	FA.2.2.1 Group Insurance companies					
	FA.2.2.2 Group Insurance Medical coverage					
FA.2.3	FA.2.3.1 Households for OOP					
FA.2.4	FA.2.4.1 Money lending Institutions					
	Total	11,800	1,60,081	8,596	60,170	1,72,669
	%	0.16	2.12	0.11	0.80	2.29

	FS X FA **Financial Agents**	**Financial Sources**				
		FA. 2 Private Funds				
		FS.2.1Private Firms				FS.2.2 Households
		FS.2.1.1 Private Firms towards Group Insurance premium 6	FS.2.1.2 Private Firms towards 4.75% ESIC premium 7	FS.2.1.3 Private Insurance Companies towards medical coverage 8	FS.2.1.4 Group Insurance companies towards Medical coverage 9	FS.2.2.1 Households contribution towards Yeshasvini scheme 10
FA 1.1	FA.1.1.1 Yashasvini Scheme					53,710
	FA.1.1.2 Yashasvini Medical coverage					
	FA.1.1.3 ESIC Scheme		4,48,762			
	FA.1.1.4 ESIC Medical coverage					
	FA.1.1.5 CGHC scheme					
	FA.1.1.6 CGHC Medical coverage					
FA.2.1	FA.2.1.1 Private Individual Insurance companies	2,51,649				
	FA.2.1.2 Individual/Household Medical coverage			64,715		
FA.2.2	FA.2.2.1 Group Insurance companies					
	FA.2.2.2 Group Insurance Medical coverage				3,44,580	
FA.2.3	FA.2.3.1 Households for OOP					
FA.2.4	FA.2.4.1 Money lending Institutions					
	Total	2,51,649	4,48,762	64,715	3,44,580	53,710
	%	3.33	5.94	0.86	4.56	0.71

	FS X FA	**Financial Sources**				
		FS.2.2 Households				
	Financial Agents	FS. 2.2.2 Households contribution towards Individual/Household Insurance Premium 11	FS.2.2.3 Households contribution towards 1.75% ESIC premium 12	FS.2.2.4 Households contribution towards CGHC premium 13	FS.2.2.5 Households contribution towards Group insurance coverage co-payment 14	FS.2.2.6 Households contribution towards EMI for loan taken 15
FA 1.1	FA.1.1.1 Yashasvini Scheme					
	FA.1.1.2 Yashasvini Medical coverage					
	FA.1.1.3 ESIC Scheme		1,65,333			
	FA.1.1.4 ESIC Medical coverage					
	FA.1.1.5 CGHC scheme			18,900		
	FA.1.1.6 CGHC Medical coverage					
FA.2.1	FA.2.1.1 Private Individual Insurance companies	2,13,030				
	FA.2.1.2 Individual/Household Medical coverage					
FA.2.2	FA.2.2.1 Group Insurance companies					
	FA.2.2.2 Group Insurance Medical coverage				68,916	
FA.2.3						
FA.2.4	FA.2.4.1 Money lending Institutions					1,55,927
	Total	2,13,030	1,65,333	18,900	68,916	1,55,927
	%	2.82	2.19	0.25	0.91	2.06

		Financial Agents							
	FS X FA **Financial Agents**	FS.2.2 Households 16	FS.2.3 Moneylending (for-profit) Institutions 17	FS.2.4 Donors (not-for-profit) 18	FS.2.5 External Aid (not-for-profit) 19	Total 20	% 21	Total of coverage 22	% 23
		FS.2.2.7 Households OOP coverage of medical expenditure	FS.2.3.1 Loan amount	FS.2.4.1 Donation amount	FS.2.5.1 Aid amount				
FA 1.1	FA.1.1.1 Yashasvini Scheme								
	FA.1.1.2 Yashasvini Medical coverage					65,510	0.74		
	FA.1.1.3 ESIC Scheme					1,60,081	1.80	1,60,081	2.12
	FA.1.1.4 ESIC Medical coverage					6,14,095	6.92		
	FA.1.1.5 CGHC scheme					68,765	0.77	68,765	0.91
	FA.1.1.6 CGHC Medical coverage					18,900	0.21		
FA.2.1	FA.2.1.1 Private Individual Insurance companies					1,72,669	1.95	1,72,669	2.29
	FA.2.1.2					4,64,679	5.24		

	Individual/Household Medical coverage								
FA.2.2	FA.2.2.1 Group Insurance companies					64,715	0.73	64,715	0.86
	FA.2.2.2 Group Insurance Medical coverage					0	0.00		
FA.2.3	FA.2.3.1 Households for OOP					4,13,496	4.66	4,13,496	5.47
FA 2.4	FA.2.4.1 Money lending Institutions	5914404				59,14,404	66.65	59,14,404	78.28
						1,55,927	1.76		
			761200			7,61,200	8.58	7,61,200	10.08
Total		5914404	761200	0	0	88,74,441	100.00		
%		78.28	10.08	0.00	0.00		Carried forward to HP	75,55,330	100.00
					Premium amount aggregate	13,19,112			

Source: Computed from Survey Data

The highest contributor in this context of health ecosystem is the Household (HH). It is pooling 66.65% of total funds acting as a Financial Source as well as acting as a Financial Agent. This amount is moving forward as funds to Health Providers and is being mostly financed by sale of assets and personal savings. A disturbing fact is revealed by the share of contribution of borrowings, 8.58% going to providers, coming from For-profit institutions like money lenders, private banks, self-made community banks or chit funds serving HH. The rates of interest as mentioned by these HH are as high as 13-20% depending on the amount, urgency and agreement of tenure of returning the sum. Around 5% is being contributed to Private (for-Profit) voluntary insurance companies and Private (not-for-profit) group insurance companies.

Social welfare Insurance companies like ESIC sponsored partly by Centre and State and Individual Employees is acquiring contribution of 6.92%. CGHC, an entirely Central Government initiative with minimal employee contribution received less than 1% since the sample had only 11 HH where any member was working in a Central Government job. Yeshasvini scheme, a self-funded cooperative society with state Government support is seen receiving a meagre 1% in to the RH healthcare partially due to less percentage of sample coverage.

Total State and Central Government contribution to RH finance is as little as 2.39% and 3.08% respectively. The Private sector (for-profit and not-for-profit) is contributing 14.69%. HH are contributing a massive 87.23% in the RH health care finance. These contributions are higher than State level percentage shares.

Table 6

Matrix FA X HP: Captures the flow of funds from Financial Agents to Health Providers

	FA X HP	**Financial Agents**									
		FA.1.1.2 Yeshasvini Scheme (Coverage)	FA.1.1.4 ESIC Scheme (Coverage)	FA.1.1.6 CGHC scheme (Coverage)	FA.2.1.2 Private Insurance companies via Individual Insurance (Coverage)	FA.2.2.2 Private Insurance companies via Group Insurance (Coverage)	FA.2.2.1 Households via OOP co-payment towards Group Insurance (Coverage)	FA.2.3.1 Households via OOP towards Medical coverage	FA.2.4.1 Loans via private Money lending institutions (Coverage)	Total	%
Health Providers	HP.1.1 Health Providers at primary level	0	3,381	4,165	0	0	0	97,461	1,000	1,06,007	1.40
	HP.1.2 Health Providers at secondary level	0	5,578	4,483	0	0	0	2,41,004	3,200	2,54,265	3.37
	HP.1.3 Health Providers at tertiary level	1,29,500	36,515	1,18,637	53,960	3,17,424	63,485	33,53,078	6,82,200	47,54,799	62.93
	HP.1.4 Health Providers at Pathology Labs/Radiology level	28,137	11,103	13,662	4,975	14,166	2,833	5,95,021	35,100	7,04,997	9.33

	HP.1.5 Health Providers at Pharmacy level	2,444	12,188	31,721	5,780	12,990	2,598	1,62,7841	39,700	17,35,262	22.97
	Total	1,60,081	68,765	1,72,669	64715	3,44,580	68,916	59,14,404	7,61,200	75,55,330	100.00
	%	2.12	0.91	2.29	0.86	4.56	0.91	78.28	10.08	100.00	

Source: Computed from Survey Data

An alarming rate of 62.93% fund is flowing into Tertiary level of Health Providers which might indicate towards inefficiency of primary and secondary level providers. There seemed to a possibility of a nexus between private primary and secondary level providers to make referrals in inappropriate amount and manner. Another serious health finance issue is rooted in the fact that pharmaceutical outlets are gulping in more than *one-fifth* of the whole resources at 22.97%. There seems to be a disbalance between desired ratio among health providers since Primary being the most focused in Universal Health Coverage Objective of the Nation, it received a meagre 1.4% only.

In terms of contribution from various Financial Schemes, again the HHs show a massively outweighed ratio of 78.28% resources into various provider levels. More disturbing fact was the method of how it is being financed. It reveals a 10% procurement from borrowing from for-profit money lending institutions which might indicate catastrophic health expenditure as warned by WHO, a daunting situation faced by low income countries.

Table 7

Matrix HP X HF: Captures the flow of funds from Health Providers to Health Functions/Inputs

	HP X HF	Health Providers											
		HP.1.1 Health Providers at primary level	HP.1.2 Health Providers at secondary level	HP.1.3 Health Providers at tertiary level	HP.1.4 Health Providers at Pathology Labs/Radiology level	HP.1.5 Health Providers at Pharmacy level	HP.2.2.1.1 Co-payment at primary level	H.P2.2.1 .2 Co-payment at secondary level	HP.2.2.1.3 Co-payment at tertiary level	HP.2.2.1.4 Co-payment at Pathology Labs/Radiology level	HP.2.2.1.5 Co-payment at Pharmacy level	Total	%
Health Functions	HF.1.1 RH disorder healthcare	46,332	50,126	2,58,7610	2,75,802	1,42,0620	0	0	2,479	248	372	4383,589	58.02
	HF.1.2 Pre-natal (foetus and mother), Delivery & Post-Partum (unto 6 weeks of mother) healthcare	14,572	25,433	14,65,918	2,72,267	1,51,941	0	0	59,155	2,284	1,892	19,93,461	26.38
	HF.1.3 Neo-natal (of infant unto 28 days after birth) healthcare	18,965	45,064	1,78,150	38,392	67,150	0	0	1,851	301	334	3,50,207	4.64
	HF.1.4 Family Planning care	6,435	91,421	2,25,459	36,149	32,470	0	0	0	0	0	3,91,933	5.19
	HF.1.5 Abortion care	7,594	23,262	1,36,516	40,010	25,523	0	0	0	0	0	2,32,905	3.08

	HF.1.6 Miscarriage care	12,109	18,958	97,661	39,545	34,960	0	0	0	0	0	2,03,233	2.69
	Total	10,6007	25,4265	46,91,314	7,02,164	17,32,664	0	0	63,485	2,833	2,598	75,55,330	100.00
	%	1.40	3.37	62.09	9.29	22.93	0.00	0.00	0.84	0.04	0.03	100.00	

Source: Computed from Survey Data

More than half of all the resources/funds are going into Reproductive Health (RH) Disorder treatments and its being used at tertiary level to the extent of 62%. This needs to be looked into since primary and secondary levels are capable of providing preventive and curative inpatient and OPD services. Moreover, PHCs, CHCs, THs and DHs should have trained Medical Officers and Specialists according toIPHS. According to the respondents, absence of trained staff and facilities were the reasons why they were forced to spend at private tertiary level Health Providers.

An interesting finding from this matrix is that it indicates the dominance of private sector and complete failure of public sector in providing Laboratory, Diagnostic and Radiology facilities putting 9% of funds into this domain. This facility is crucial and commonly needed for RH disorder and Pregnancy/Delivery related Health functions. The total amount of 71% funds into this area is used up by these two Health Functions.

Another area of Health Function which is gulping a chunk of resources from Health Providers at the Pharmaceutical and Therapeutical needs level is RH disorder and Delivery/Pregnancy. The amount is an unbelievable 90% of all medicinal need's expenditure. This should serve as a pointer for Government to ensure free and subsidised good quality drugs for post-procedure tenure.

Table 8

Matrix FA X HF: Captures the flow of funds from Financial Agents to Health Functions/Inputs

	FA X HF	Financial Agents									
Health Functions		FA.1.1.2 Yeshasvini Scheme (Coverage)	FA.1.1.4 ESIC Scheme (Coverage)	FA.1.1.6 CGHC scheme (Coverage)	FA.2.1.2 Private Insurance companies via Individual Insurance (Coverage)	FA.2.2.2 Private Insurance companies via Group Insurance (Coverage)	FA.2.2.1 Households via OOP co-payment towards Group Insurance (Coverage)	FA.2.3.1 Households via OOP towards Medical coverage	FA.2.4.1 Loans via private Money lending institutions (Coverage)	Total	%
	HF1.1 RH disorder healthcare	98,027	0	1,53,233	41,090	15,496	3,099	35,66,644	5,06,000	43,83,589	58.02
	HF1.2 Pre-natal (foetus and mother), Delivery & Post-Partum (up to 6 weeks of mother) healthcare	44,028	52,113	9,790	0	3,16,652	63,330	13,02,548	2,05,000	19,93,461	26.38
	HF1.3 Neo-natal (of infant unto 28 days after birth) healthcare	18,026	6,606	0	0	12,432	2,486	3,10,657	0	3,50,207	4.64
	HF1.4 Family Planning RH care	0	10,046	9,646	15,780	0	0	3,56,461	0	3,91,933	5.19
	HF 1.5 Abortion care	0	0	0	7,845	0	0	1,92,060	33,000	2,32,905	3.08
	HF 1.6 Miscarriage care	0	0	0	0	0	0	1,86,033	17,200	2,03,233	2.69

	Total	1,60,081	68,765	1,72,669	64,715	3,44,580	68,916	59,14,404	7,61,200	75,55,330	100.00
	%	2.12	0.91	2.29	0.86	4.56	0.91	78.28	10.08	100.00	

Source: Computed from Survey Data

From the **FA X HP** matrix, it is clear that the amounts that came from Financial Schemes like Yeshasvini, ESIC and CGHC together weren't impressive enough, standing at only 5.32%. Private Individual and Group Insurance was taking care of only 5.42% of fund injection into Health Provider level. So, the bottom line is that the funds moving into Health functions are being provided (co-payments and sole-payments) 80% through assets sale, and savings dilution and rest 10% from personal borrowings to pay-off healthcare bills for various RH needs. Borrowings and Social Insurance are bearing the same amount of share in providing funds to Health Providers who in turn are injecting those funds into various Healthcare provisions.

RH disorder and Pregnancy/Delivery Health Inputs were absorbing 85.04% of all the funds moving in from Financial Agents. It was even more depressing to find out that 90% of all funds are being insourced from Households as the sole Financial Agent. To reiterate that Households are being pushed into indebtedness and extreme poverty would not be wrong. Public Sector presents a dismal picture in the whole scenario.

4.5Comparison with General Health Expenditure Matrices

Table 9

Matrix FS X FA: Captures the flow of funds from Financial Sources to Financial Agents in General Health

FS X FA		Financial Sources											
Financial Agents			FS.1 Public Funds				FA. 2 Private Funds						
			FS.1.1. State Government		FS.1.2 Central Government		FA. 2.1 Private Firms		FS.2.2 Households		FS.2.3 Moneylending (for-profit) Institutions		
			FS.1.1.2 State Department of H&FW towards Yeshasvini Coverage	FS.1.1.3 State Department of H&FW towards 12.5% ESIC coverage	FS.1.2.1 Central Government Ministry of H&FW towards 87.5% ESIC coverage	FS.1.2.2 Central Government contribution towards CGHC coverage	FS.2.1.3 Private Insurance Companies towards medical coverage	FS.2.1.4 Group Insurance companies towards Medical coverage	FS.2.2.5 Households contribution towards Group insurance coverage co-payment	FS.2.2.7 Households OOP coverage of medical expenditure	FS.2.3.1 Loan amount	Total of coverage	%
	FA.1.1	FA.1.1.2 Yashasvini Medical coverage	42,370									42,370	0.35
		FA.1.1.4 ESIC Medical coverage		27,356	1,91,490							2,18,846	1.83
		FA.1.1.6 CGHC Medical coverage				1,35,476						1,35,476	1.13
	FA.2.1	FA.2.1.2 Individual/Household Medical coverage					0					0	0.00
		FA.2.2.2 Group Insurance Medical coverage						9,55,196	1,90,439			11,45,635	9.56

		FA.2.3.1 Households for OOP								91,91,429		91,91,429	76.70
		FA.2.4.1 Money lending Institutions									12,49,300	12,49,300	10.43
		Total	42,370	27,356	1,91,490	1,35,476	0	9,55,196	1,90,439	91,91,429	12,49,300	1,19,83,056	100.00
		%	0.35	0.23	1.60	1.13	0.00	7.97	1.59	76.70	10.43	100.00	

Source: Computed from Survey Data

Total contribution from State Government towards Yeshasvini and ESIC coverage amounts to a meagre 0.58% of total General Health Expenditure. Central Government towards ESIC and CGHC coverage amounts to 2.73% of total General Health Expenditure. Private Sector Insurance companies are contributing less than 8% and the majority of General Health Expenditure is borne by Households at 78.29% via sale of assets and saving and another 10.43% which is financed by borrowing.

4.5.1 Comparison with Finance of RH expenditure

The State Government finances 2.39% of Total RH Expenditure. Central Government contributes 3.09% towards Total RH Expenditure. Private Sector Insurance companies are financing 5.42% and Households are contributing 79.19% via sale of assets and saving and another 10.08% which is financed by borrowing.

Thus, State Government finances are contributing way higher percentage of RH total expenses compared to general health expenses. This might be due to longer duration of treatment cases of pregnancy than involved in general health cases. Private Sector Insurance companies are contributing way lesser percentage of RH total expenses compared to general health expenses. This might be due to private insurance companies not covering OPD costs at all levels whereas State welfare schemes does. Central Government and Households share is similar in both.

Table 10

Matrix FA X HP: Captures the flow of funds from Financial Agents to Health Providers in General Health

Financial Agents												
			FA. 1 Public Sector			FA. 2 Private Sector						
FA X HP			FA.1.1			FA.2.1						
			FA.1.1.2 Yashasvini Medical coverage	FA.1.1.4 ESIC Medical coverage	FA.1.1.6 CGHC Medical coverage	FA.2.1.2 Individual/Household Medical coverage	FA.2.2.2 Group Insurance Medical coverage	Households via OOP co-payment towards Group Insurance	FA.2.3.1 Households for OOP	FA.2.4.1 Money lending Institutions	Total	%
	Health Providers	HP 1.1 Health Providers at primary level	0	9,574	12,660	0	1,280	0	1,46,381	0	1,69,895	1.42
		HP.1.2 Health Providers at secondary level	390	17,006	16,060	0	1,719	0	3,33,226	2,78,450	6,46,851	5.40
		HP.1.3 Health Providers at tertiary level	39,000	1,45,711	86,335	0	9,35,521	1,87,104	62,42,225	8,07,990	84,43,886	70.47
		HP.1.4 Health Providers at Pathology Labs/Radiology level	1,780	29,777	10,352	0	10,224	2,044	8,55,136	62,530	9,71,843	8.11
		HP.1.5 Health Providers at Pharmacy level	1,200	16,778	10,069	0	6,452	1,290	16,14,462	1,00,330	17,50,581	14.61
		Total	42370	2,18,846	1,35,476	0	9,55,196	1,90,438	91,91,429	12,49,300	1,19,83,056	100.00
		%	0.35	1.83	1.13	0.00	7.97	1.59	76.70	10.43	100.00	

Source: Computed from Survey Data

A massive share of 70.47% is being spent at tertiary level health providers for various general health functions. This is followed by a huge amount of 14.6% being spent at pharmacy level providers. Another provider level which is absorbing a whole lot of funds is radiology and pathology provisions at 8.11%.

4.5.2 Comparison with Finance of RH expenditure

In RH, massive share of 62.93% is being spent at tertiary level health providers for various reproductive health functions. This is followed by a huge amount of 22.97% being spent at pharmacy level providers. Another provider level which is absorbing a whole lot of funds is radiology and pathology provisions at 9.33%.

Thus, at Tertiary level Health Provider, General Health Expenditure is higher than RH Expenditure. General Health Expenditure is lower than RH Expenditure at Pharmacy Level and Pathology/Radiology level Providers. That might indicate more in-patient/surgery procedures involved in General Health. This might indicate more radiology/pathology needs and a longer duration medicinal requirementduring pregnancy.

4.6Triangulation of Data

Household survey was undertaken to capture fund movements among the various actors involved in RH sector focusing on the private sector involved as part of the main research objective. The fund movements were recorded in matrix format for construction of RHA matrices. The pieces of information that were collected and used for this procedure called for authentication from other data sources as well. This process commonly known as triangulation of data, was necessary in order to validate the main research. Five subsidiary studies were concurrently undertaken for this purpose. The details of those studies are provided below:

4.6.1 Study I

Individual Survey

4.6.1.1 Methodology

4.6.1.1.1Study design

Study usedcross-sectional *s*urvey design adopting multistage stratified sampling method. Karnataka, a state, lagging in RH indicators in Southern India, chosen in first stage was followed by Ramanagara, a medium developed RH indicator district in second stage. Third stage involved choosing two talukas Ramanagara and Chennapatna indicating medium RH performance.

Ramanagara district has 1 district hospital, 3 general hospitals, 4 community health centres (CHCs), 61 primary health centres (PHCs), 240 sub-centres, and 4 urban primary health centres (UPHC). In the fourth stage 9 PHCs were chosen, 3 each from rural areas in both the talukas, 2 PHCs and 1 CHC in urban area of Ramanagara taluka and 2 PHCs and 1 Sub-District Hospital in urban Chennapatna Taluka. Permission was taken from the Ramanagara District Health Office to visit these 11 Health Facilities and administer the questionnaires to those individuals who visited these facilities. In the final stage the questionnaire was administered to only those individuals who confirmed incurring RH expenditures in last one year (March 2017-March2018).

4.6.1.1.2Data collection

The survey tools Men's and Women's questionnaires (used as interview schedules) catering to RH, Pregnancy, Neonatal, Family Planning, Abortion and Miscarriage issues taken from 'WHO Guide to produce RH Sub-Account' for collecting data covered curative, preventive, rehabilitative, palliative, ambulatory and psycho-social support for in-patient and out-patient health expenditures incurred at various health provider levels including patient and attendants' expenditures on consultation, drugs, radiology, dietary supplements, accommodation charges, food and transport.

According to 2011 Ramanagara census, 56.01% of total population of 1082636 is in RH age group (15-49) i.e. 606384 individuals. Deciding on confidence level of 95% and a confidence interval of 1.25 the sample size estimated was 6085. As per PHCs, in a year, not more than $1/10^{th}$ of RH age group would face any RH situation, a sample size of maximum 600 individuals was estimated. 517 individuals including 132 Males and 127 Females and 131 Males and 127 Females were chosen from Ramanagara and Chennapatna talukas respectively.

4.6.1.1.3Statistical analysis

Data was processed using Excel and SPSS 20. The OOPE on RH, dependent scaled variable consisted of expenditures incurred on 6 RH functions. The dependent variable was mapped against the categorical variables.

4.6.1.1.4Ethical consideration

Institutional ethical clearance was taken before data collection. After orientation about study details, privacy concerns and interview environment verbal consent were taken from all participants. Minors and illiterates were interviewed in the presence of another adult family member. Data was aggregated maintaining complete privacy of personal details.

Table 11

Descriptive statistics of the sample

	Total number of individuals	% of Individuals up to Middle school education	% of Individuals beyond Middle school education	% in Occupations (excluding labourers, unemployed)	% of Regular Earners (excluding irregular and in kind)	Average Per Capita Annual Income (in Indian Rupees)	% financing RH expenditure by borrowing	% Covered by private and social welfare insurances
Total	517	85.1	39.5	21.45	21.45	2,05,868	53.2	13.5
Hindus in sample	259	86.87	70	37.5	37.5	2,90,845	10.4	25.9
Muslims in sample	258	83.33	9	5.4	5.4	1,20,890	96	1.1

Source: Computed from Survey Data

It is seen that very few Muslims reached ‘beyond middle school’. Outcome can be occupation bias and job engagement at seasonal, low-paid daily-wage. Further negligible insurance coverage was found among Muslims all leading to heavy borrowing to finance OOPE in RH.

Table 12

Reproductive Health Expenditures Incurred by Hindus and Muslims (in Indian Rupees)

Per-capita and total expenditure incurred	RH disorder/wellbeing	Pre-natal (mother and foetus), delivery and post-partum (mother) up to 28 days after childbirth	Neo-natal healthcare of new-born up to 6 weeks	Family Planning	Abortion	Miscarriage	Total amount spent on RH related expenditures in last one year by Hindus and Muslims
Hindus Total Expenditure	8,33,884	15,93,108	3,76,479	15,093	4,626	15,622	28,38,811
Hindus Per Capita Expenditure	5,999	5,551	1,298	5,031	4,626	5,207	
Muslims Total Expenditure	5,07,150	32,27,106	9,18,660	3,36,022	3,12,040	2,00,512	55,01,491
Muslims Per Capita Expenditure	26,692	18,441	5,190	10,501	16,423	16,709	

Source: Computed from Survey Data

It is seen that an average Muslim incurring two to five times higher OOPE in RH than a Hindu in all RH functions considered in this study. This might be due to a greater number of insured individuals among Hindus.

4.6.1.1.5Discussion

Muslims were found to be more engaged in occupations which were physically strenuous, seasonal and low paid indicating a toll on their RH. 19 RH disorder cases among Muslims yet adding up to 77% of RH disorder expenditure of Hindus with 102 RH disorder cases corroborates this. Their negligible insurance coverage mainly financed by heavy borrowing lead to poor nutritional habits, hygiene and habitation conditions.

On an average it was found that Muslim individuals had a family size of six compared to Hindus having four. The Muslim women having delivered twice before were ineligible for cash support from schemes like 'Extended Thayi Bhagya (Plus)'. Each day of missed work led to wage loss drove them towards private tertiary level providers claiming faster recovery rates, better reputation and easier access.

Frequent pregnancies and childbirth with not much attention provided to one's health might have added to their RH disorders complexity. The number of abortions and miscarriages were also found to be higher in Muslim women compared to Hindu women.

4.6.2 Study II

Primary Health Centres Survey

4.6.2.1Methodology

4.6.2.1.1Study Design

Cross sectional study of public health facilities present in rural and urban areas of two sub-districts of District Ramanagara, state of Karnataka to find out their supply side readiness levels to meet IPHS guidelines.

Multistage stratified random sampling was used to choose the sample Public facilities. First stage involved choosing the state of Karnataka which is lagging behind neighbouring Southern states in RH indicators. Second stage involved choosing Ramangara District being medium in terms of RH indicators followed in third stage, by choice of two mediumly developed RH indicator talukas Ramanagara and Chennapatna. Ramanagara district has 61 primary health centres (PHCs) and 4 urban primary health centres (UPHC). Fourth stage

involved three PHCs randomly chosen from rural areas of each taluka, two UPHCs from Ramanagara taluka and one UPHC from Chennapatna taluka.

4.6.2.1.2Data collection

Provider data was collected using standardised DLHS (District Level Household and Facility Survey) Round 3 questionnaires for PHC, used in Reproductive and Child Health (RCH) project (sponsored by MoHFW, implemented by IIPS) used in relevance of PHC facility survey. Information collected was then compared with IPHS guidelines proforma for PHCs available under IPHS guidelines manual. Permission was taken from Ramanagara District Health and Family Welfare Office to visit these nine PHCs and administer these questionnaires.

Data collection was undertaken in the months of May and June 2018. The service compliance information part of questionnaire part is pertinent to last one month, in this case, month of April 2018 for all PHCs for consistency reasons. The training (pertains to last five years), manpower, infrastructure and behavioural details provided, pertain to last one year starting from March 2017-March 2018. Upon instruction from Medical Officers (MOs), the concerned staff provided the details. Data was tabulated and analysed using epi form 7 and Excel.

4.6.2.1.3Ethical considerations

Prior Institutional Ethical clearance was taken before undertaking the study. Permission of District Health and Family Welfare Office (DHFW) was taken to visit these 9 Public Health Facilities. The entire list of PHCs existing in the Ramanagara district along with their respective addresses and details of Medical Officers (MOs) was provided to us from the DHFW's office. Prior intimation about our visit was sent to the respective facilities after interaction with the MOs. The survey visits to the concerned facilities began with an introductory briefing about the objective of the study (with the assistance of the MOs) so as to make the staff aware of the details of the study. The questionnaires were handed over to the concerned MO who instructed each of the concerned section of questionnaire only to be filled by the pertinent senior staff member handling the respective departments. The questionnaires were collected after they were duly signed and attested by the MO or the senior most staff responsible for PHC administration in their absentia.

4.6.2.1.4Findings

Table 13

Unmet Individual Compliance criterions as per IPHS guidelines for PHC

	Unmet Essential IPHS Manpower Compliance	Unmet IPHS Infrastructural Compliance	Unmet IPHS Quality Control Compliance	Unmet IPHS Services Compliance	Unmet IPHS Behavioural Compliance
RPHC1	AYUSH Medical officer, Male Health Assistant, 6 short of essential manpower prescribed by IPHS	Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, wheel chair, baby warmer, Deep freezer large, deep freezer small, Binocular Microscope	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Immunization training, Partial use of Untied funds	24/7 facility with Delivery Option, In-patient admission provision	Nil
RPHC2	AYUSH Medical officer, , Male Health Assistant, 8 short of essential manpower prescribed by IPHS	Short of 3 beds, Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, baby warmer, Ice lined Refrigerator (large), Deep freezer large, Rapid Plasma Reagin (RPR) test kits for syphilis, Centrifuge, Light microscope, Binocular Microscope,anti-anginal essential drug, essential RTI/STI drug Tab Norfloxacin	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Minilap training, Partial use of Untied funds	24/7 facility with Delivery Option, In-patient admission provision	Nil
RPHC3	AYUSH Medical officer, , Male Health Assistant, 7 short of essential manpower prescribed by IPHS	Short of 2 beds, Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, baby warmer, Rapid Plasma Reagin (RPR) test kits for syphilis,	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Immunization training, 12 days integrated skill development (RCH-1), Minilap training, Skilled Birth	24/7 facility with Delivery Option, In-patient admission provision	Nil

		Centrifuge, Light microscope, Binocular Microscope Blood grouping, essential RTI/STI drug Tab Norfloxacin, Benzathine Penicillin Injection and Tab Fluconazole	Attendant Training		
RPHC4	AYUSH Medical officer, short of 1 Staff Nurse, Male Health Assistant, 6 short of essential manpower prescribed by IPHS	Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, baby warmer, Ice lined Refrigerator (large), Deep freezer large, Light microscope, Essential Obstetric care drugs	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Management of Emergency Obstetric Complications (BEmOC), 12 days integrated skill development (RCH-1), Minilap training, RTI/STI training, Non-Utilized Untied funds	Nil	Nil
RPHC5	AYUSH Medical officer, Male Health Assistant, 8 short of essential manpower prescribed by IPHS	Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, baby warmer, Ice lined Refrigerator (small), deep freezer small, Light microscope	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Integrated Management of Neonatal and Childhood Illnesses, Management of Emergency Obstetric Complications (BEmOC), Immunization training, Directly Observed Treatment-Short Course (DOTS), Minilap training, Skilled Birth Attendant Training, Clear Information about Untied funds usage	24/7 facility with Delivery Option, In-patient admission provision	Nil
RPHC6	AYUSH Medical officer, , Male Health Assistant, 7 short of	Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, Ice lined Refrigerator	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Integrated Management of Neonatal	24/7 facility with Delivery Option, In-patient admission provision	Nil

	essential manpower prescribed by IPHS	(small), deep freezer small, Rapid Plasma Reagin (RPR) test kits for syphilis, Binocular Microscope	and Childhood Illnesses, 12 days integrated skill development (RCH-1), Vector Borne Disease Control Program (VBDCP), Minilap training, Training of Health workers (Male & Female),		
UPHC1	For 150% overload of population catering, AYUSH Medical officer, Staff Nurse, Male Health Assistant, 7 short of essential manpower prescribed by IPHS	Short of 3 beds, Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, Centrifuge, Light microscope	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Training of Health workers (Male & Female), Clear Information about Untied funds usage	24/7 facility with Delivery Option, In-patient admission provision	Nil
UPHC2	For 60% overload of population catering, AYUSH Medical officer, Staff Nurse, Male Health Assistant, 7 short of essential manpower prescribed by IPHS	Short of 4 beds, Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, Ice lined Refrigerator (small), deep freezer small	Minilap training	24/7 facility with Delivery Option, In-patient admission provision	Nil
UPHC3	For 190% overload of population catering, AYUSH Medical officer, Staff Nurse, Male Health Assistant, 7	Short of 4 beds, Labour Room, Operation Theatre, Store room, Ancillary room, Laundry, baby warmer	Non-Scalpel Vasectomy training to Medical Officer in last 5 years, Integrated Management of Neonatal and Childhood Illnesses, Management of Emergency Obstetric Complications	24/7 facility with Delivery Option, In-patient admission provision	Nil

	short of essential manpower prescribed by IPHS		(BEmOC), Immunization training, 12 days integrated skill development (RCH-1), Minilap training, Skilled Birth Attendant Training, Clear Information about Untied funds usage		
CHC	General Surgeon, Physician, OT attendant and Registration clerk	Ultrasound Facility, General OT, standard surgical sets	NSV training, emergency obstetric training and Ultrasound training to MO in last 5 years	Rapid Plasma Test for syphilis, anti-anginal test, ant- leprosy and filaria, Low weight babies' weight management	Nil
SDH (category 2)	Anaesthetist, Radiologist, 4 short of general duty doctors, venereologist, public health manager, medical records officer	Telephone facility, Central sterile and supply department, Washrooms in unusable condition in wards	Not applicable	Ultrasound facility, coomb's test, Surgery other than ob-gyn not 24/7	Para-medical staff overburdened Long queues, no privacy in wards for Ob-Gyn cases

Source: Computed from Survey Data

RPHC Rural Primary Health Centre; UPHC Urban Primary Health Centre; CHC: Community Health Centre; SDH: Sub-District Hospital RPHC1: Laksmipura, RPHC2: Kanva, RPHC3: Kootagal, RPHC4: Kodamballi, RPHC5: Honganur, RPHC6: Jagadapura, UPHC1: Mehboobnagar, UPHC2: Rayardoddi, UPHC3: S S Mohalla, CHC: Bidadi, SDH: Chennapatna; Category 2 refers to 51-100 bedded hospitals
RPHC1, 2, 3 in Ramanagara Taluka; RPHC4, 5, 6 in Chennapatna Taluka; UPHC1, 2 in Ramanagara Taluka; UPHC3 in Chennapatna Taluka

4.6.2.1.5 Discussion

Inaccessibility barriers were being created by Location, shortage of Skilled Manpower and Physical Infrastructure. Needless to say, that the three variables mentioned above were intertwined inseparably. Issues were faced by long travelling distances keeping in mind the rural public transport amenities in those areas. None barring one had birthing facilities and was operating 24/7, was a blatant flouting of IPHS guidelines. Only 66% of RPHCs had 6 beds as per guidelines. For RPHC 1, farthest Sub-centre (SC) to Community Health Centre (CHC)/District Hospital (DH) distance was 25-30 kms, RPHC 2 had 18-35 kms, RPHC 3 had 14-30 kms, RPHC 4 had 18 kms to Taluk Hospital (TH), RPHC 5 had 13 kms to TH, RPHC 6 had 25 kms to TH. We should focus on this farthest distance and highlight shortages.

Based on this reasoning, all RPHCs, although catering to way smaller population than mentioned in IPHS guidelines, still, should have 24/7 facility and minimum 6 beds along with labour and OT functional facilities. 30% didn't have staff nurse. 11% didn't have a female MO. None had Female Health Assistant (FHA). 22 % had no Male Health Assistant (MHA). Not having a female MO, MHA and FHA was a cultural shock in a country like India when it comes to RH care. Based on this the researcher would like to point out that appointment of 1 AYUSH Medical Officer (AMO, lady in case MO was male)) becomes critical for the 6 RPHCs, besides 5 RPHCs need to be converted into facilities offering delivery and 24/7 facilities with added posting of Staff Nurses, Female and Male Health Assistants.

This becomes mandatory because it was common during our survey study to see that the only MO in the facility was unavailable due to meetings arranged at sub-district and higher levels. Patients walked long distances leaving their daily household chores or wages only to wait in PHCs in the hope of meeting MOs, discovering later the whole effort has gone futile. The fact that all 5 RPHCs had only day care in-patient admissions was another extremely daunting situation keeping in mind the facilities and their distances from nearest secondary and tertiary level public providers.

A very important point is to be noted here 3 UPHCs which were catering to twice or thrice the amount of population recommended by IPHS were having only 2-3 beds and not operating round-the-clock. But before passing our judgement we should keep in mind that all these 3 UPHCs were at a distance of within 2 kms of District and Taluka Hospitals having 100 beds and 24/7 facilities.

Should we simply go by guidelines or give scope for reasoning of shortages? Our study wants to stress on these factors rather than numbers which are made essential and mandatory by IPHS.

Another finding was regarding Quality control compliance and it showed Untied funds, a quality enhancing tool was either partially used or information wasn't provided indicating either documentation issues or non-transparency. Moreover, the ratings of facilities were the deciding factor for release of funds and a lot of procedural formalities delayed or complicated its usage.

At CHC and SDH level, it was found to have manpower inadequacies with respect to specialists like surgeons, radiologists, anaesthetists, venereologists, general duty doctors and at services compliance levels, it lacked 24/7 general surgeries, general OTs and tests like RPR. Infrastructural facilities were present but were unhygienic in SDH with respect to washrooms and ward cleanliness. Behavioural compliance was met in CHC but there was some dissatisfaction when it came to SDH in terms of cordial behaviour which seemed to originate from overcrowding in all daysthroughout OPD hours.

4.6.3Study IIIPrivate Clinics/Hospitals

4.6.3.1 Methodology

4.6.3.1.1Study Design

A purposive non-random survey of 4 private clinics,2 hospitals, 2 radiology and 2 pathology laboratories which were mentioned by the respondents of Household and Individual survey was done with an objective of validation of the expenditure and facilities data. They were all located in the vicinity of Ramanagara and Chennapatna talukas within the District.

4.6.3.1.2 Data Collection

Infrastructure data was collected using a standardised private provider questionnaire used as an interview schedule. It had items on physical, human and facility infrastructure. Minimal verbal information was provided with assurance of anonymity. No proof of rate list or visit was provided except in some cases where the visiting card was furnished. One facility had a rate list with no name of provider displayed at the facility. Request for taking a tour inside their facilities were denied. Charges for healthcare functions were verbally asked and only the price range quoted were noted down. Only limited information was available which could be specifically used but a general overview of rates being charged in the area of study as mentioned by respondents, could be verified.

4.6.3.1.3Ethical Consideration

Purpose of data collection was conveyed verbally to all the respondents. Complete anonymity was assured verbally and confidentiality of personal information was conveyed to all the representatives of the health providers who were mainly the people attending at reception desk of these facilities. Data collected has not been used anywhere other than for this study and only for data triangulation purpose in aggregated format.

4.6.3.1.4 Findings

Table 14

Details of Facilities Available and Rates Charged as furnished by Private Health Providers

Facilities	InfrastructuralPresence as quoted by staff	Rates of procedure as quoted by staff in Rs
Private clinic 1	2 Ob-Gyn on rotation basis all days, 1 ENT Doctor, 2 General Physicians with MD, 4 Evaluation rooms, Dressing area, 1 nurse, 1 housekeeping staff. Working hours 7AM-8PM	Consultation of Ob-Gyn doctor: 350-500 Consultation of MD Doctor: 250-350
Private clinic 2	1 Ob-Gyn on alternate days, 1 General Physician with MBBS, 1 General Physician with MD, 1 ENT Doctor, 2 Evaluation rooms, Dressing area, 1 nurse, 1 housekeeping staff. Working hours 7AM-9:30PM	Consultation of Ob-Gyn doctor: 250-400 Consultation of MD Doctor: 250-350
Private clinic 3	3 Ob-Gyn on rotation basis all days, 2 ENT Doctors on rotation basis all days, 2 General Physicians with MD on rotation basis all days, 4 Evaluation rooms, Dressing area, 2 nurses, 3 housekeeping staff. Working hours 9AM-10PM	Consultation of Ob-Gyn doctor: 300-400 Consultation of MD Doctor: 250-350
Private clinic 4	1 Ob-Gyn on all days, 2 ENT Doctors on rotation basis all days, 2 General Physicians with MD all days, 3 Evaluation rooms, Dressing area, 2 nurses, 1 housekeeping staff. Working hours 8AM-9PM	Consultation of Ob-Gyn doctor: 250-400 Consultation of MD Doctor: 200-300
Private Hospital 1	3 General Doctors with MD qualification in the morning and 4 in the evening, 24/7 facility, 2 Ob-Gyn doctors, 2 more on call 24/7, 2 paediatrician, 1 heart specialist on call, 1 nephrologist on call, 2 ENT,1 Anaesthetist, 1General surgeon on daily basis and 2 more on call,1Pharmacist, 1OT room,general ward of 12 patients, small private rooms for 5 patients, labour ward with 10 beds, 3 ambulances, referral system with Super-speciality	Consultation of MD doctor: 250 Consultation of Ob-Gyn doctor: 350-500 Consultation of Surgeon: 400-600 Consultation of paediatrician: 400 Ward charge per day: 220 Room charge: 1200 plus food 300-450 per day for patient Normal delivery Procedure: 12000-16000

	hospital, 1 matron, 10 nurses, 6 ward boys, housekeeping staff and some para-medical staff.	C Section 18000-50000 as per case ICU charge per day 4000 Attendant bed 150 in ward and 300 in room
Private Hospital 2	5 General Doctors with MD qualification 2 in the morning and 3 in the evening, 24/7 facility, 5 Ob-Gyn doctors, 2 on alternate days,3 more on call 24/7, 4 paediatrician, 1 heart specialist twice a week, 1 nephrologist on call, 3 ENT on daily basis,1 Anaesthetist, 3 General surgeon on daily basis and 4 more on call, 1Pharmacist, 2 OT rooms,1 ICU, general ward of 24 patients, small private rooms for 10 patients, labour ward with 12 beds, 5 ambulances, referral system with Super-speciality hospital, 2 matrons, 12 nurses, 8 ward boys, housekeeping staff and some para-medical staff.	Consultation of MD doctor: 250 Consultation of Ob-Gyn doctor: 350-500 Consultation of Surgeon: 450-700 Consultation of paediatrician: 400 Ward charge per day: 250 Room charge: 1500 plus food 300-450 per day for patient Normal delivery Procedure: 15000-18000 C Section 23000-55000 as per case ICU charge per day 5000 Attendant bed 150 in ward and 300 in room
Private Radiology 1	Provision for X Ray, Ultrasound, MRI, CT scan	Ultrasound for pregnancy 750, 850, 950 for respective trimester, X ray range 400-800, MRI 1800-6000, CT scan range 2000-4500
Private Radiology 2	Provision for X Ray, Ultrasound	Ultrasound for pregnancy 750, 800, 850 for respective trimester, X Ray 300-650
Private Pathology 1	Diagnostic Tests, Own sample collection and processing	Complete blood Count: 50 Urine Routine and Culture for UTI: 100; 600 Pregnancy test: 600 Ante natal: 1300; Sugar: 50-100 Blood Culture: 600
Private Pathology	Diagnostic tests, Only collection centre	Complete blood Count: 50

2	Urine Culture for UTI: 100-650 Pregnancy test: 750 Sugar: 50-200 Blood Culture: 650

Source: Computed from Survey Data

4.6.3.1.5Discussion

From the table above it is confirmed that the information provided by respondents of households and individual surveys was authentic information regarding profile of the clinics and hospitals, their infrastructure and facilities available and the charges involved.

4.6.4Study IV Private Companies

Employer Surveywas undertaken of some of those private enterprises which were mentioned by the households and individual survey respondents.

4.6.4.1Methodology

4.6.4.1.1Study Design

A purposive sample study was undertaken to validate Employer Contribution in RH.

4.6.4.1.2Date Collection

There were 2 Large size companies, 2 Medium size companies and 5 Small size companies. Standardised Employer Survey Questionnaire for Health Contribution for RH was administered to the Human Resource Managers. The items had sections on information about the profile of the company, age and grade wise salary profile of employees, provision of Medical Reimbursement and Allowance details and information about Health Insurance Provision and Contribution. Some of the sensitive information weren't shared and those sections were not completed and information was withheld.

4.6.4.1.3Ethical Consideration

Purpose of data collection was conveyed in writing to all the respondents. Data collected has not been used anywhere other than for this study and only for data triangulation purpose in aggregated format.

4.6.4.1.4 Findings

Table 15

Details of Private Company and their Contribution towards RH

Company Name and Location	Size Small:<100 employees Medium: >100<1000 employees Large: >1000 employees	Medical Reimbursement Provision	Medical Allowance Provision	Health Insurance Provision
PRINT JET SOLUTIONS LLP, Nagarbhavi, Bangalore	Small	None	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.
Mahajan & Co., Mysore Road, Bangalore	Small	Only for Class I employees	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.
KAMS CNC MACHINING PVT. LTD., Nadakerappa Industrial Estate, Bangalore	Small	None	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.
S.V. PRESS COMP., Peenya, Bangalore	Small	None	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.
TEXEL PRESS COMP., Peenya, Bangalore	Small	None	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.
Helios Packaging, Garvebhavipalaya, Hosur Road,	Medium	None	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.

Bangalore				
Mylartex, Hosahalli, Gollarahatti, Bangalore	Medium	None	None	Provision of In-house Nurse, Doctor Up to 21000Rs salary ESI facility and contribution of 4.75% by employer Maternity and Sickness Benefit provided as per Government rule.
Kalyani Motors Private Ltd., Mysore Road Junction, Bangalore	Large	Rs1250 per month as per Government rule for salary above 21000Rs	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer and 1.75% from employee borne by company. Tie-up with Bajaj Allianz for Hospitalization above 24 hours for salary above 21000Rs per month. Maternity and Sickness Benefit provided as per Government rule.
Sansera Engineering Private Ltd., Bommasandra, Bangalore	Large	None	None	Up to 21000Rs salary ESI facility and contribution of 4.75% by employer and 1.75% from employee borne by company. Tie-up with Medi Manage for Hospitalization above 24 hours for salary above 21000Rs per month. Maternity and Sickness Benefit provided as per Government rule.

Source: Computed from Survey Data

4.6.4.1.5 Discussion

From the table above it is confirmed that the information provided by respondents of households and individual surveys had provided authentic information regarding profile of the company, age and grade wise salary profile of employees, provision of Medical Reimbursement and Allowance details and information about Health Insurance Provision and Contribution.

4.6.5Study VNGO

4.6.5.1 Methodology and Discussion

There are three categories of NGOs in Ramanagara District, registered under as Trust, Cooperative Society and Society. According to the information provided by the NGO, Sarvajananga Hita Rakshane Seva Samaste operating in the area for the last three years and confirmed by UPHC SS Mohalla staff, Chennapatna Taluka, it is the only NGO functioning for welfare objectives. Interview was conducted with Mr. S.M. Siddeeq, founder member of the NGO after verbally orienting the purpose of the study. In the domain of health, it organises regular blood donation camps, cancer treatment donation campaigns, health awareness and free check-up camps by Medical Officers and Voluntary Hospital Members, neo-natal awareness programs, RH camps for women providing check-ups, consultation and free medicines once a month.

One thing that was revealed by the interviewee was that there was a lot of red-tapism when it comes to doing welfare activities and that lack of donor funds was a huge impediment. Respondents of Household and Individual survey did mention the functioning of this NGO although no link to their financing of health expenditure bearing could be firmly established.

4.6.6Study VIDemand side analysis of patient satisfaction from Public Health Facilities (PHCs, CHC and SDH)

4.6.6.1Methodology

4.6.6.1.1 Study Design

Cross-sectional survey design using multistage stratified sampling method, to look into the demand side of RH from the individual consumers (patient) of services provided by Public Health facilities at Primary, Secondary and Tertiary level of Health Providers.

4.6.6.1.2Data Collection

Standardised Patient Satisfaction Questionnaire (Short Form Patient Satisfaction Questionnaire PSQ-18) was used to collect data on patient satisfaction levels derived by utilizing services offered by Public Health Facilities. In the first stage, only those patients in the age group pf 15-49, who visited the 11 PHCs, 1CHC and 1TH in the two talukas Ramanagara and Chennapatna of Ramanagara District were chosen. In the second stage, only those patients who had medical background of RH issues and had received treatment in the last one year (April 2017-March 2018) in the same facilities were included. In the third stage, only those patients were selected who visited the same facilities more than once in last one year.

According to the information provided by PHC, CHC and TH questionnaire for facility survey of PHC, CHC and TH respectively, in a month total 10941 patients were treated in OPD and in-patient cases in the month of May 2018. Out of that RH related cases were 2650. On an average, the total RH cases were around 30000-40000 in a year. Keeping this as population, the sample size was estimated at 380 at Confidence Interval of 5 with Confidence Level of 95%. Total 398 patients were selected for the final survey analysis. Data was collected in the month of June 2018.

4.6.6.1.3Statistical analysis

Data was processed using Excel and SPSS 20 software. The tool/ questionnaire consisted of 18 items and it was divided into 7 sub-scales. Demographical descriptives like mean and standard deviation were extracted. The sub-scales were measuring General Satisfaction (2 items), Technical Quality (4 items), Interpersonal Manner (2 items), Communication (2 items), Financial Aspects (2 items),Time spent with Doctor (2 items) and Accessibility and Convenience (4 items). Overall Satisfaction level (OSAT) was arrived at by adding up the average scores of all the sub-scales for each individual. The questionnaire was in the form of a likert scale with a five point agreement query leading to derived five levels of satisfaction thereby starting from ‘very unsatisfactory’ to ‘very satisfactory’. 7 items had to be scored in reverse order. Averages were extracted to arrive at 7 different components of satisfaction.

4.6.6.1.4Ethical consideration

Institutional ethical clearance was taken before data collection. After orientation about study details, privacy concerns and interview environment, verbal consent was taken from all participants. Minors and illiterates were interviewed in the presence of another adult family member. Data was aggregated maintaining complete privacy of personal details.

4.6.6.1.5Findings

Table 16

Descriptive Case Summary of Dependent and Independent Variables of Patient Satisfaction Levels

Independent Variables	Frequency n (%)	Marginal Percentage
Gender		
Male	87	21.86
Female	311	78.14
Age groups (in years)		
15-25	114	28.64
26-35	137	34.42
36-49	147	36.93
Educational Level		
Illiterate	15	3.77
Primary	186	46.73
Secondary	139	34.92
Tertiary	58	14.57
Income Level		
Less than 1 Lakh annually	81	20.35
1Lakh- 3 Lakh annually	147	36.93
3 lakh - 5 lakh annually	141	35.43
More than 5 lakh annually	29	7.29
Number of visits in last one year		
2-4 visits in last one year	107	26.88
5-8 visits in last one year	158	39.70
More than 8 in last one year	133	33.42
Medical background		
RH disorders	153	38.44
Pregnancy related	67	16.83
Neo-natal related	62	15.58
Family Planning	67	16.83

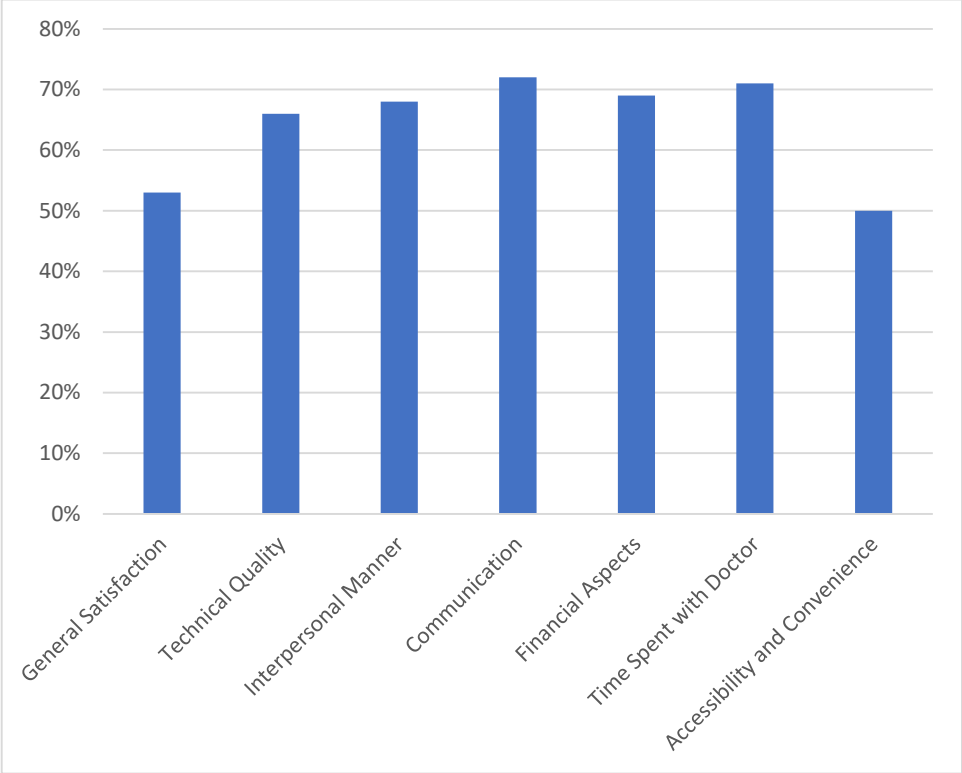
Abortion/Miscarriage	49	12.31
Insured or Uninsured		
Insured	101	25.38
Uninsured	297	74.62
Lives how far from facility		
Less than 2 kms	72	18.09
2-5 kms	83	20.85
5-10 kms	107	26.88
10-25 kms	105	26.38
More than 25 kms	31	7.79
Religion		
Hindus	188	47.24
Muslims	207	52.01
Others	3	0.75
Type of visits		
OPD only in last one year	157	39.45
OPD and in-patient in last one year	218	54.77
In-patient only in last one year	23	5.78
Employment type		
Regular Salary	96	24.12
Daily wage based	137	34.42
Self employed	147	36.93
Unemployed	18	4.52

Source: Computed from SPSS outputof Survey Data

The table above gives the descriptive summary of the composition of each sub-group of categorical variables divided among the 398 respondents in absolute numbers and also marginal percentage. Each sub-group marginal percentage adds up to 100%. For example: for the variable age, in the range 15-25 there were 114, 26-35 there were 137, 36-49 there were 147 individuals, making them constitute 28.64%, 34.42% and 36.93% respectively adding up to 100% i.e. 398 individuals.

4.6.6.1.6The Sub-scale Findings of the Questionnaire

The 7 sub-scale values which were aggregated to arrive at the Overall Satisfaction Levels are provided below:



Source: Self Survey Excel Output

Figure 4: ***Patient Satisfaction Sub-Component Levels***

Patients are found to be comparatively better satisfied with Interpersonal Manner, Communication, Time Spent with Doctor and Financial Aspects while using these Public facilities whereas they are less satisfied by components of Technical Quality, General Satisfaction, and Accessibility and Convenience.

Table 17

Distribution of Sample according to Different Domains of Satisfaction Levels and Demography

Variable	Frequency n (%)	Mean ± SD							
		General satisfaction	Technical quality	Inter personal manner	Communication	Financial aspect	Time spent with doctor	Accessibility and Convenience	Overall Satisfaction (OSAT)
Gender									
Male	87	2.82 ± 0.84	3.24 ± 0.77	4.14 ± 1.02	2.75 ± 1.17	3.21 ± 0.91	2.94 ± 0.84	2.77 ± 0.91	3.12 ± 0.35
Female	311	2.63 ± 0.86	3.33 ± 0.7	3.17 ± 1.06	3.85 ± 1.5	3.49 ± 1.14	3.71 ± 1.22	2.43 ± 0.96	3.23 ± 0.37
Age groups (in years)									
15-25	114	2.64 ± 0.81	3.3 ± 0.74	3.35 ± 1.13	3.46 ± 1.16	3.62 ± 1.04	3.48 ± 1.19	2.5 ± 0.89	3.2 ± 0.35
26-35	137	2.69 ± 0.98	3.3 ± 0.69	3.46 ± 1.12	3.7 ± 2.07	3.44 ± 1.12	3.56 ± 1.15	2.57 ± 1	3.25 ± 0.41
36-49	147	2.67 ± 0.79	3.33 ± 0.71	3.34 ± 1.11	3.63 ± 1.05	3.28 ± 1.1	3.57 ± 1.23	2.45 ± 0.96	3.18 ± 0.34
Educational Level									
Illiterate	15	2.90 ± 0.87	3.43 ± 0.59	3.60 ± 0.92	1.70 ± 0.77	3.13 ± 0.74	2.90 ± 0.89	3.00 ± 0.71	2.95 ± 0.34
Primary	186	2.63 ± 0.85	3.30 ± 072	3.28 ± 1.09	3.77 ± 1.79	3.49 ± 1.13	3.78 ± 1.08	2.38 ± 0.88	3.24 ± 0.38
Secondary	139	2.73 ± 0.92	3.31 ± 072	3.26 ± 1.08	3.80 1.03	3.39 ± 1.03	3.42 ± 1.33	2.58 ± 1.05	3.21 ± 0.35
Tertiary	58	2.59 ± 0.74	3.29 ± 0.70	3.95 ± 1.19	3.10 ± 1.15	3.43 ± 0.82	3.22 ± 1.08	2.61 ± 0.96	3.17 ± 0.34
Income Level									
Less than 1 Lakh annually	81	2.89 ± 0.99	3.21 ± 0.87	3.44 ± 1.13	3.41 ± 1.19	3.31 ± 1.16	3.37 ± 1.16	2.58 ± 1.02	3.17 ± 0.43
1Lakh- 3 Lakh annually	147	2.41 ± 0.56	3.38 ± 0.59	3.15 ± 1.1	4 ± 1.84	3.71 ± 1.01	3.78 ± 1.18	2.29 ± 0.8	3.25 ± 0.35
3 lakh - 5 lakh annually	141	2.78 ± 0.98	3.29 ± 0.74	3.46 ± 1.11	3.49 ± 1.24	3.34 ± 1.12	3.54 ± 1.21	2.57 ± 0.99	3.21 ± 0.36
More than 5 lakh annually	29	2.84 ± 0.79	3.36 ± 0.71	4.07 ± 0.92	2.71 ± 0.96	2.81 ± 0.85	2.81 ± 0.88	3.09 ± 1.03	3.1 ± 0.34

Number of visits in last one year									
2-4 visits in last one year	107	2.66 ± 0.79	3.31 ± 0.78	3.6 ± 1.17	3.51 ± 2.24	3.53 ± 0.82	3.51 ± 1.1	2.44 ± 0.84	3.22 ± 0.39
5-8 visits in last one year	158	2.67 ± 0.97	3.35 ± 0.64	3.25 ± 1.02	3.82 ± 1.03	3.42 ± 1.25	3.69 ± 1.26	2.51 ± 1.05	3.25 ± 0.37
More than 8 in last one year	133	2.68 ± 0.78	3.26 ± 0.74	3.37 ± 1.17	3.42 ± 1.18	3.36 ± 1.1	3.39 ± 1.17	2.55 ± 0.93	3.15 ± 0.35
Medical background									
RH disorders	153	2.74 ± 0.85	3.31 ± 0.73	3.75 ± 1.11	3.12 ± 1.23	3.37 ± 0.99	3.32 ± 1.01	2.57 ± 0.9	3.17 ± 0.35
Pregnancy related	67	2.57 ± 0.79	3.35 ± 0.8	3.2 ± 1.13	4.22 ± 2.51	3.39 ± 1.25	3.69 ± 1.33	2.36 ± 0.91	3.25 ± 0.47
Neo-natal related	62	2.5 ± 0.85	3.35 ± 0.62	3.04 ± 1.02	3.72 ± 1.09	3.4 ± 1.13	3.66 ± 1.29	2.61 ± 1.06	3.18 ± 0.37
Family Planning	67	2.69 ± 0.93	3.29 ± 0.65	3.2 ± 1	3.7 ± 1.14	3.62 ± 1.09	3.7 ± 1.26	2.47 ± 0.98	3.24 ± 0.36
Abortion/Miscarriage	49	2.78 ± 0.9	3.26 ± 0.74	3.17 ± 1.14	4.02 ± 0.7	3.48 ± 1.16	3.67 ± 1.22	2.45 ± 1.02	3.26 ± 0.26
Insured or Uninsured									
Insured	101	2.87 ± 1.11	3.33 ± 0.56	3.24 ± 0.83	4.05 ± 1.17	3.23 ± 1.51	3.39 ± 1.48	2.64 ± 1.15	3.25 ± 0.42
Uninsured	297	2.6 ± 0.75	3.31 ± 0.76	3.43 ± 1.2	3.45 ± 1.58	3.5 ± 0.9	3.6 ± 1.07	2.46 ± 0.88	3.19 ± 0.35
Lives how far from facility									
Less than 2 kms	72	2.74 ± 0.8	3.36 ± 0.66	3.37 ± 1.08	3.66 ± 1.09	3.61 ± 1.02	3.54 ± 1.22	2.5 ± 0.99	3.25 ± 0.33
2-5 kms	83	2.69 ± 0.93	3.31 ± 0.74	3.56 ± 1.2	3.49 ± 1.15	3.25 ± 1.12	3.54 ± 1.17	2.52 ± 0.91	3.2 ± 0.33
5-10 kms	107	2.52 ± 0.76	3.43 ± 0.7	3.24 ± 1.1	3.8 ± 2.17	3.54 ± 1	3.73 ± 1.19	2.3 ± 0.79	3.22 ± 0.44
10-25 kms	105	2.79 ± 0.93	3.23 ± 0.67	3.21 ± 1.04	3.7 ± 1.19	3.46 ± 1.22	3.52 ± 1.24	2.59 ± 1.07	3.22 ± 0.36
More than 25 kms	31	2.6 ± 0.86	3.06 ± 0.86	4.02 ± 1.07	2.76 ± 1.01	3 ± 0.92	2.98 ± 0.84	2.94 ± 0.96	3.05 ± 0.3

Religion									
Hindus	188	3.22 ± 0.31	2.61 ± 0.88	3.39 ± 0.71	3.22 ± 1.1	3.73 ± 1.04	3.4 ± 1.14	3.8 ± 1.11	2.38 ± 0.9
Muslims	207	2.71 ± 0.85	3.24 ± 0.72	3.53 ± 1.12	3.51 ± 1.82	3.46 ± 1.07	3.33 ± 1.22	2.61 ± 0.99	3.2 ± 0.42
Others	3	3.33 ± 0.76	3.33 ± 0.58	3.83 ± 1.04	2.33 ± 1.15	3.5 ± 0.5	2.33 ± 0.58	3.42 ± 0.72	3.15 ± 0.02
Type of visits									
OPD only in last one year	157	2.66 ± 0.85	3.31 ± 0.73	3.28 ± 1.18	3.68 ± 1.93	3.44 ± 1.09	3.58 ± 1.15	2.43 ± 0.96	3.2 ± 0.39
OPD and in-patient in last one year	218	2.67 ± 0.89	3.35 ± 0.65	3.41 ± 1.08	3.71 ± 1.06	3.47 ± 1.14	3.6 ± 1.22	2.5 ± 0.94	3.24 ± 0.34
In-patient only in last one year	23	2.78 ± 0.69	2.93 ± 1.01	3.87 ± 0.98	2.07 ± 0.83	3.07 ± 0.55	2.76 ± 0.95	3.08 ± 0.89	2.94 ± 0.38
Employment type									
Regular Salary	96	2.67 ± 0.8	3.29 ± 0.72	3.55 ± 1.11	3.42 ± 1.13	3.44 ± 1.09	3.53 ± 1.2	2.67 ± 1.01	3.22 ± 0.34
Daily wage based	137	2.53 ± 0.74	3.39 ± 0.66	3.19 ± 1.13	3.54 ± 1.08	3.5 ± 0.9	3.84 ± 0.97	2.31 ± 0.79	3.19 ± 0.31
Self employed	147	2.77 ± 1	3.24 ± 0.77	3.37 ± 1.09	3.99 ± 1.91	3.41 ± 1.29	3.34 ± 1.33	2.53 ± 1.03	3.24 ± 0.43
Unemployed	18	2.94 ± 0.73	3.36 ± 0.51	4.06 ± 1.01	1.97 ± 0.81	2.97 ± 0.7	3.03 ± 1.02	2.9 ± 0.9	3.03 ± 0.34

Source: Computed from SPSS outputof Survey Data

4.6.6.1.7Discussion

The Overall Satisfaction (OSAT) score derived by working on the average of the 7 sub-scales of the tool shows that sub-categories of demographic variables are influencing satisfaction levels. The sub-categories of Males, Age category 36-49, Illiterate, Income levels greater than 5 Lakhs per annum, Patients who had visited the facilities more than 8 times in last one year, Patients with RH disorder medical background, having no Insurance, Hindus, made only Inpatient visits (in-patient facility not there in 8 out of 9 PHCs) and unemployed were found to be least satisfied in each of their categories.Consumers of healthcare seemed to be higher satisfied in the domains of Communication, Time spent with Doctor, Financial aspects, Interpersonal manner, Technical Quality followed by General satisfaction (talks about perfection of medical care and complete satisfaction) and Accessibility and Convenience indescending order of satisfaction levels.

This clearly indicates that these public facilities are meeting good levels of behavioural compliance of IPHS standards as seen in Supply side survey. What they lack is services compliance originating from human infrastructural deficiency manifesting in non-availability of in-patient facilities, 24/7 specialists and 24/7 operating hours. As seen by the supply side survey, it is reinforced by the demand side survey that technical quality in terms of physical infrastructure like radiology, venereology, anaesthesia, certified medical officers per patient, data syncing in online portals, qualifications of available medical officers is at stake.

4.7Data Triangulation Discussion

The findings from Private Hospitals/Clinics and Public Facilities, Private enterprises, Individuals and NGO, were in complete alignment to the information provided by Households during construction of RHA matrices at sub-district levels in the state of Karnataka. The expenditure flows, quantities and timing were fortified by these parallel surveys. The OOPE by individuals and expenditures incurred by private sector involved in RH as captured by Household survey were similarly reflected by these triangulation survey (which excluded Insurance companies) findings. No conflict of ideas, concepts or information was recorded.

5.Integrative Summative Discussion

Fromthe main study and the complementary studies undertaken, it becomes clear that there is a definite need for boosting up of share of public health expenditure in total health expenditure. The share of OOPE in total RH expenditure is huge and might lead to poverty and imbalanced consumption expenditure component. There is a skewed inclination of choice when it comes to utilising public health facilities. Private sector is performing better and

patient satisfaction is higher from these facilities. Although, this higher satisfaction is coming with a very high price tag, thereby a higher opportunity cost. This is where public initiative can step in and motivate the consumers to avail public facilities which requires infrastructural reforms and better monitoring of existing amenities at all levels of healthcare.A constant appraisal of all actors and capturing the fund flows among them can be an excellent tool in this direction.

5.1Recommendations for Policy

From the first major finding from the main study, the first matrix shows that the households were financing more than 87% of the total expenditures on RH and it was being financed by sale of assets (80%) and heavy borrowing (10%). Total State and Central Government contribution to RH finance is as little as 2.39% and 3.08% respectively. Meagre funds were pouring in from social welfare schemes like Yeshasvini, ESIC and CGHC. Government needs to motivate self-funded schemes like Yeshasvini and ESIC by spreading awareness and its coverage base to out-patient expenses at accessible distances of especially rural people.

The second matrix shows that an alarming rate of 62.93% fund is flowing into Tertiary level of Health Providers which might indicate towards inefficiency of primary and secondary level providers. There seemed to a possibility of a nexus between private primary and secondary level providers to make referrals in inappropriate amount and manner. Another serious health finance issue is rooted in the fact that pharmaceutical outlets are gulping in more than *one-fifth* of the whole resources at 22.97%. There seems to be a disbalance between desired ratio among health providers since Primary being the most focused in Universal Health Coverage Objective of the Nation, it received a meagre 1.4% only. There is a strong need to revamp the tertiary providers within public sector. Better medical help and solution by primary and secondary public facilities can ease the burden at tertiary level. Policy changes are required to follow IPHS guidelines of 24/7 facilities with in-patient amenities dispensing quality pharmacy products.

The third and fourth matrix reveals more than half of all the resources/funds are going into Reproductive Health (RH) Disorder treatments and its being used at tertiary level to the extent of 62%. This needs to be looked into since primary and secondary levels are capable of providing preventive and curative inpatient and OPD services. Moreover, PHCs, CHCs, THs and DHs should have trained Medical Officers and Specialists according to Indian Public Health Standards (IPHS). According to the respondents, absence of trained staff and facilities were the reasons why they were forced to spend at private tertiary level Health Providers. It

indicates complete failure of public sector in providing Laboratory, Diagnostic and Radiology facilities putting 9% of funds into this domain. This facility is crucial and commonly needed for RH disorder and Pregnancy/Delivery related Health functions

The first finding from individual survey indicated Muslim individuals rarely reached 'beyond middle school'. This is one reason why they face occupation bias and are recruited in jobs which are seasonal, low-paid and based on daily-wages. Incentivising schemes like RMSA and low interest entrepreneurship funding for minority start-ups is recommended. Second finding of negligible insurance coverage and awareness among Muslims. It is therefore recommended that inclusive social welfare schemes like 'Prasoothi Araike' and 'Extended Thayi Bhagya Plus' to be made available irrespective of restraints like number of live births. Thorough investigation into Central government schemes like 'Pradhan Manthri Mathru Vandana Yojana' reportedly of little use, due to eligibility and disbursement criterions, is needed. Third finding shows two to five times higher OOPE in RH incurred by an average Muslim individual in all RH functions. Introduction of better sickness and maternity benefit packages in informal sector is strongly suggested.The last finding revealed higher per capita RH expenditure among uninsured Muslims on three RH functions.Reason cited for lower preference for public facilities due to absence of doctors, rude behaviour, longer queues, medicine shortage and distance. A designated monitoring committee needs to look into such matters of lack of medical infrastructure and disrespectful attitude of health professionals thereby giving more meaningful direction to individual finances saved. Schemes for informal sector primarily targeting women have to be introduced with a higher access.

The first finding from Public Facilities survey shows that the inaccessibility barriers created by Location, shortage of Skilled Manpower and Physical Infrastructure in the RPHCs, CHC and SDH. It reports lack of skill training of staff leading to workforce imbalance and non-availability of specific services like MTP, neo-natal and intra-natal, reveals a crucial need for integration of in-service training via continuous need-based partnerships of medical universities and Public Facilities. It calls out for converting RPHCs into 24/7 facilities with heightened trained staffing, in-patient facilities, functional equipments and instruments, available laboratory tests and drug stocks, provisions for delivery and minor surgery, which suggests quality enhancement in existing facilities.

The second finding recommends better digitisation of PHC data with mobile portals in a way which is retrievable easily by concerned staff. It suggests frequent training organised by corporate interventions via free Information and Communication Technology orientations

under Corporate Social Responsibility and mandatory internships of students of medical institutions with PHCs. This suggestion is corroborated by WHO report.

The third finding about non-optimal utilisation of untied funds strongly demands active stakeholder engagement of entire village to let them decide in tandem with government agencies at block and village level what they feel is required as investment on an annual basis in local PHCs. Moreover, they should be given responsibilities to monitor and evaluate fund utilization. Representatives of Arogya Raksha Samiti/Rogi Kalyan Samiti (ARS/RKS) functioning bureaucratically in course of time have to be removed and new entrants of so called not-so-prominent should be given more chances to serve.

The last finding about behavioural compliance recommends incentivisation of medical practitioners and staff for maintaining decorum and ethical standards. Their efforts to go out of the way in spite of inaccessibility to them as well. The residential quarters provided had minimal amenities forced them to travel long distances on a daily basis. The staff went out to provide healthcare with deficient resources, garnered community awareness, handled outbreaks, lend ear to grievances and was as empathetic as possible along with their normal workload. A strong appeal to the policy makers to understand, empathise and reinforce medical ethics at all times by appropriate incentivisation of the right people at the right time at the right place.

NGOinterview finding was indicating that there were very few registered NGOs working in and around the area of study. Although, they wanted to undertake more health activities yet a shortage of donor funds and bureaucracy was a challenge constantly faced by the volunteer members. A little more support from prominent stakeholders in order to work flexibly would help in the long way.

Private sector employersurvey finding revealed that there was a monetary pressure on the small size companies when it comes to ESIC contribution. Except for one large sized company, none of the enterprises were reimbursing medical expenditures or giving any medical allowance. For higher than 21000 Rs bracket salaried staff, it becomes difficult to avail healthcare since it has to be borne via OOPE because private group health insurance doesn’t cover expenditures for OPD, pharmacy and radiology/pathology unless its 24 hours hospitalisation. The medical allowance given by very few companies is too less for meeting family healthcare needs. There should be some provision by private insurance providers to partner with health providers in public and private sector for availing OPD needs at especially primary level.

Demand side findingshows that there is a demand lag caused by technical quality glitches and accessibility and convenience. Government should step in and incentivise the demand surging factors like behavioural compliance and monitor and design technical efficiency in these public facilities which in turn can bring down OOPE in private sector and the over burden of tertiary level health providers.

5.2Limitation and Delimitation

The study was delimited to only two sub-districts of the district of Ramanagara, Karnataka. Only 11 PHCs, 1 CHC and 1 TH were considered for the study. It focuses on the household sector and the financing of their RH needs. Demand side predictor variables have been limited to only nine. The study suffers from the limitation of aggregation capacity at district level since extremely little of public domain secondary data is available for access in RH, which could be used to extrapolate thefindings of this study. Private sector provider facilities data wasn't provided formally for the purpose of this study so the validation had to be documented anonymously in this study.

5.3 Scope for Further Research

The study can be consolidated at District Level with focus on the public sector data along with the private sector household data on reproductive health. It could be extended to all the four sub-districts of the District of Ramanagara. Results can be better generalised if all the Public Health Facilities could be included. Study can be better validated if formal permission could be taken from the Private Health Facilities at all provider levels, to give consent for conducting formal surveys and publishing of data, at least at an aggregated level. Demand side of the study can be taken forward and predictor models could be constructed which might contribute towards better infrastructural facilities enhancing future satisfaction levels in healthcare.

References

Abel-Smith, B. Paying for Health Services: A Study of the Costs and Sources of Finance in Six Countries. Public Health Papers, No. 17. World Health Organization: Geneva, 1963.

AbouZahr, C., & Vaughan, J. P. (2000). Assessing the burden of sexual and reproductive ill-health: questions regarding the use of disability-adjusted life years. Bulletin of the World Health Organization, 78, 655-666.

Agrawal, S. (2009). India's National Population Policy (2000): An Evaluation.

Allendorf, K. (2010). The quality of family relationships and use of maternal health-care services in India. Studies in Family Planning, 41(4), 263-276.

Annigeri, V. B. (2003). District health accounts: An empirical investigation. *Economic and Political Weekly*, 1989-1993

Aral, S. O., & Peterman, T. A. (1998). Do we know the effectiveness of behavioural interventions?. The Lancet, 351, S33-S36.

Araújo Jr, J. L. C. D., & Maciel Filho, R. (2001). Developing an operational framework for health policy analysis. Revista Brasileira de Saúde Materno Infantil, 1(3), 203-221.

Awiti, J. O. (2014). Poverty and health care demand in Kenya. BMC health services research, 14(1), 560.

Axelson, H., Bales, S., Minh, P. D., Ekman, B., & Gerdtham, U. G. (2009). Health financing for the poor produces promising short-term effects on utilization and out-of-pocket expenditure: evidence from Vietnam. International Journal for Equity in Health, 8(1), 20.

Azzam, O., Dhamo, S., & Kola, T. (2005). Introducing National Health Accounts in Albania (No. 55). BERG working paper series on government and growth.

Begum, S., Dwivedi, S. N., Pandey, A., & Mittal, S. (2010). Association between domestic violence and unintended pregnancies in India: findings from the National Family Health Survey-2 data. National Medical Journal of India, 23(4), 198.

Behrman, Jere R. and James C. Knowles.1998. ?Population and Reproductive Health: An Economic Framework for Policy Evaluation.? Population and Development Review 24(4): 697?737.

Berman, P. A. (1997). National health accounts in developing countries: appropriate methods and recent applications. Health economics, 6(1), 11-30.

Bobadilla, J. L., Cowley, P., Musgrove, P., & Saxenian, H. (1994). Design, content and financing of an essential national package of health services. Bulletin of the World Health Organization, 72(4), 653.

Census of India 2011, Registrar General and Census Commissioner, India

Chakraborty, S. N., Bhattacherjee, S., & Rahaman, M. A. (2016). A cross-sectional study on patient satisfaction in an urban health care centre of Siliguri Municipal Corporation, Darjeeling, West Bengal. Medical Journal of Dr. DY Patil University, 9(3), 325.

Chapter 21, Health by NITI Aayog, Accessed on 27January, 2017, Available at: https://www.niti.gov.in/writereaddata/files/coop/21.pdf

Char, A., Saavala, M., & Kulmala, T. (2010). Influence of mothers-in-law on young couples' family planning decisions in rural India. Reproductive health matters, 18(35), 154-162.

Chowdhury, S. (2009, October). Health shocks and urban poor: a case study of slums in Delhi. In 5th Annual Conference on Economic Growth and Development.

Claeys, V., & Wuyts, E. (2005). Official development assistance levels and spending on sexual and reproductive health and rights since the ICPD. The new demographic regime, 199-250.
Dayaratna, V., Winfrey, W., McGreevey, W., Hardee, K., Smith, J., Mumford, E., ... & Berg, R. (2000). Reproductive health interventions: which ones work and what do they cost? Futures Group.
Frenk, J. (1995). Comprehensive policy analysis for health system reform. Health Policy, 32(1-3), 257-277.
Galárraga, O., Sosa-Rubí, S. G., Salinas-Rodríguez, A., & Sesma-Vázquez, S. (2010). Health insurance for the poor: impact on catastrophic and out-of-pocket health expenditures in Mexico. The European Journal of Health Economics, 11(5), 437-447.
Ghosh, S. (2011). Catastrophic payments and impoverishment due to out-of-pocket health spending. Economic and Political Weekly, 63-70.
Global Health Expenditure Database, by WHO, Accessed on July 18, 2019, Available in URL: http://apps.who.int/nha/database
Hardee, K., & Smith, J. (2000). Implementing reproductive health services in an era of health sector reform. POLICY Project.
Hazarika, I. (2010). Women's reproductive health in slum populations in India: evidence from NFHS-3. Journal of Urban Health, 87(2), 264-277.
Hopkins, S., Irava, W., & Tin, K. (2010). Comparisons of Health Expenditure in the Pacific Island Countries using National Health Accounts. Pacific health dialog, 16(2), 41-50.
Hort, K., Goss, J., Hopkins, S., & Annear, P. (2010). Conceptual frameworks, health financing data and assessing performance: a stock-take of tools for health financing analysis in the Asia-Pacific region. Health Policy and Health Finance Knowledge Hub Working Paper Series Number, 5.
Hotchkiss, D. R., Rous, J. J., Karmacharya, K., & Sangraula, P. (1998). Household health expenditures in Nepal: implications for health care financing reform. Health policy and planning, 13(4), 371-383
Hsiao, W. C. (1995). The Chinese health care system: lessons for other nations. Social science & medicine, 41(8), 1047-1055
IIHMR and FGI (2000), Financing reproductive and child health in Rajasthan: the sources and uses of funds.
IPS (2004), Review of Costs and Financing of Reproductive Health Services. Report prepared for the World Bank's South Asia Health, Nutrition and Population Unit.
Institute of Policy Studies (IPS) of Sri Lanka; Health Policy Programme. Colombo, Sri Lanka.
Jejeebhoy, S. J. (1997). Addressing women's reproductive health needs: Priorities for the family welfare programme. Economic and Political Weekly, 475-484.
Keehan, S. P., Lazenby, H. C., Zezza, M. A., & Catlin, A. C. (2004). Age estimates in the national health accounts. Health care financing review, 26(2), 1.
Kumar, A., & Mohanty, S. K. (2011). Intra-urban differentials in the utilization of reproductive healthcare in India, 1992–2006. Journal of Urban Health, 88(2), 311-328.
Kumar, M., Meena, J., Sharma, S., Poddar, A., Dhalliwal, V., Modi-Satish Chander Modi, S. C., & Singh, K. (2011). Contraceptive Use Among Low-Income Urban Married Women in India. The journal of sexual medicine, 8(2), 376-382.
Kumar, S., Dansereau, E. A., & Murray, C. J. (2014). Does distance matter for institutional delivery in rural India?. Applied Economics, 46(33), 4091-4103.
Kutzin, J. (2001). A descriptive framework for country-level analysis of health care financing arrangements. Health policy, 56(3), 171-204.

Lazenby, H. C., Levit, K. R., Waldo, D. R., Adler, G. S., Letsch, S. W., & Cowan, C. A. (1992). National health accounts: lessons from the US experience. Health Care Financing Review, 13(4), 89.
Leive, A., & Xu, K. (2008). Coping with out-of-pocket health payments: empirical evidence from 15 African countries. Bulletin of the World Health Organization, 86, 849-856C.
Lemaire, M. (1987). Satellite Accounts: a relevant framework for Analysis in Social Fields. Review of Income and Wealth, 33(3), 305-325.
Lim, S. S., Dandona, L., Hoisington, J. A., James, S. L., Hogan, M. C., & Gakidou, E. (2010). India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: an impact evaluation. The Lancet, 375(9730), 2009-2023.
Lorenz, C., & Khalid, M. (2009). Regional Health Accounts for Pakistan—Provincial and District Health Expenditures and the Degree of Districts Fiscal Autonomy on Health. The Pakistan Development Review, 48(4-II), pp-621.
Mach, E. P., & Abel-Smith, B. (1983). Planning the finances of the health sector: a manual for developing countries.
Magnoli Bocchi, A. (2005). National Health Accounts in Latin America and Caribbean-Concept, Results and Policy Uses. Results and Policy Uses (March 11, 2005).
Maputo Plan of Action for The Operationalisation of The Continental Policy Framework for Sexual and Reproductive Health and Rights, 2007-2010, at The Special Session, The African Union Conference of Ministers of Health Maputo, Mozambique18–22 September 2006 Accessed in January 16, 2018;
Available at: http://partners-popdev.org/docs/declarations/Maputo_Plan_of_Action.pdf
Marshall, G. N., Hays, R. D., Sherbourne, C. D., & Wells, K. B. (1993). The structure of patient satisfaction with outpatient medical care. Psychological assessment, 5(4), 477.
Mathur, S., Greene, M., & Malhotra, A. (2003). Too young to wed. The lives, rights, and health of young married girls. Washington, DC: International Center for Research on Women.
Measham, A. R., & Heaver, R. A. (1996). India's family welfare program: moving to a reproductive and child health approach. The World Bank.
Mistry, R., Galal, O., & Lu, M. (2009). Women's autonomy and pregnancy care in rural India: a contextual analysis. Social science & medicine, 69(6), 926-933.
Mohanty, S. K., & Pathak, P. K. (2009). Rich–poor gap in utilization of reproductive and child health services in India, 1992–2005. Journal of biosocial science, 41(3), 381-398.
Mondal, S., Kanjilal, B., Peters, D. H., & Lucas, H. (2010). Catastrophic out-of-pocket payment for health care and its impact on households: Experience from West Bengal, India. Future Health Systems, Innovations for equity.
Musgrove, P. (1999). Public spending on health care: how are different criteria related?. Health policy, 47(3), 207-223.
National Health Accounts Estimates for India 2013-14 by NHATS, NHSRC, MoHFW and GoI; Accessed on February 3, 2018;
Available at: https://mohfw.gov.in/sites/default/files/894983112214714160 58.pdf
Netherlands Interdisciplinary Demographic Institute (NIDI). 1999.Financial resource flows for population activities: report of a case study in India. New York: UNFPA.
Office of Registrar General (RGI). 2013. Special Bulletin on Maternal Mortality in India. 2010-12.RGI: New Delhi
O'Hara, B. (2004). Do medical out-of-pocket expenses thrust families into poverty? Journal of Health Care for the Poor and underserved, 15(1), 63-75.
Pachauri, S. (1995). Defining a reproductive health package for India: a proposed framework.
Pal, R. (2010). Borrowing for hospitalization in India.

Pal, R. (2012). Analysing catastrophic OOP health expenditure in India: Concepts, determinants and policy implications.

Panchamukhi, P. R., Mishra, A., Annigeri, S. V., Debi, S., Nayak, M. N., Panda, M., ... & Hallad, M. J. S. (2002). Reproductive health accounts of Karnataka: a mapping exercise to sketch the reproductive health system.

Pathak, P. K., Singh, A., & Subramanian, S. V. (2010). Economic inequalities in maternal health care: prenatal care and skilled birth attendance in India, 1992–2006. PloS one, 5(10), e13593.

Patil, S. S., Berad, A. S., & Angadi, M. M. (2009). A study to assess catastrophic household expenditure on childhood illness in an urban slum in Bijapur. Indian journal of community medicine: official publication of Indian Association of Preventive & Social Medicine, 34(4), 335.

Potrafke, N. (2010). The growth of public health expenditures in OECD countries: do government ideology and electoral motives matter?. Journal of health economics, 29(6), 797-810.

Potts, M., Walsh, J., McAninch, J., Mizoguchi, N., & Wade, T. J. (1999). Paying for reproductive health care: What is needed, and what is available?. *International Family Planning Perspectives*, S10-S16.

Poullier, J. P., & Hernández, P. (2000). Estimates of national health accounts (NHA) for 1997. World Health Organization.

Prakash, R., Singh, A., Pathak, P. K., & Parasuraman, S. (2011). Early marriage, poor reproductive health status of mother and child well-being in India. BMJ Sexual & Reproductive Health, 37(3), 136-145.

Prinja, S., Kaur, G., Gupta, R., Rana, S. K., & Aggarwal, A. K. (2018). Out-of-pocket expenditure for health care: District level estimates for Haryana state in India. The International journal of health planning and management.

Racelis, R. H., Dy-Liacco, F. V., Sabenano, R., Beltran, M., & Manaog, T. (2006). The national health accounts of the Philippines: Continuing development and new findings. Philippine Journal of Development, 33(61), 179-210.

Ramasubban, R., & Jejeebhoy, S. J. (Eds.). (2000). Women's reproductive health in India. Rawat Publications.

Ramanagara District Health Institute Details, Accessed on June 2, 2019; Available at URL:

https://ramanagara.nic.in/en/health/

Rannan-Eliya, R., Berman, P., Eltigani, E., de Silva, I., Somanathan, A., Sumathiratne, V., & Rannan-Eliya, R. P. (2000). Expenditures for reproductive health and family planning services in Egypt and Sri Lanka. Washington, DC: Policy Project.

Ruger, J. P., & Kim, H. J. (2007). Out-of-pocket healthcare spending by the poor and chronically ill in the Republic of Korea. American Journal of Public Health, 97(5), 804-811.

Saikia, N., & Kulkarni, P. M. (2017). An Assessment of India's Readiness for Tracking SDG Targets on Health and Nutrition. *ORF Occasional Paper*, *108*.

Saikia, N., & Singh, A. (2009). Does type of household affect maternal health? Evidence from India. Journal of biosocial science, 41(3), 329-353

Saksena, P., Xu, K., Elovainio, R., & Perrot, J. (2010). Health services utilization and out-of-pocket expenditure at public and private facilities in low-income countries. World health report, 20, 20.

Sekhar, R. H. (2006). Influence of income and education on household health expenditure: The case of tribal Orissa. The Orissa journal of commerce, 28, 133-144

Shahrawat, R., & Rao, K. D. (2011). Insured yet vulnerable: out-of-pocket payments and India's poor. Health policy and planning, 27(3), 213-221.
Sharma, S., & Hotchkiss, D. R. (2001). Developing financial autonomy in public hospitals in India: Rajasthan's model. Health Policy, 55(1), 1-18.
Sharma, S., McGreevey, W., & Hotchkiss, D. R. (2000). Financing health care and reproductive and child health in Rajasthan. Report prepared by The Policy Project, World Bank.
Sharma, S., McGreevey, W., Kanjilal, B., & Hotchkiss, D. R. (2002). Reproductive and child health accounts: an application to Rajasthan. Health policy and planning, 17(3), 314-321.
Singh, S., J.E. Darroch, M. Vlassoff and J. Nadeau (2004), Adding it Up: The Benefits of Investing in Sexual and Reproductive Health Care. Washington D.C. and New York: The Alan Guttmacher Institute and UNFPA.
Standing, H. (2002), Towards equitable financing strategies for reproductive health. Alternative ways to finance reproductive health care. IDS Working Paper 1
Teillet, P. (1988). A concept of satellite account in the revised SNA. *Review of Income and Wealth*, *34*(4), 411-439.
UNFPA (1994) Programme of action adopted at the International Conference on Population and Development, Cairo, 15-19 September 1994. New York.
Van Doorslaer, E., O'Donnell, O., Rannan-Eliya, R. P., Somanathan, A., Adhikari, S. R., Garg, C. C., ... & Karan, A. (2006). Effect of payments for health care on poverty estimates in 11 countries in Asia: an analysis of household survey data. The lancet, 368(9544), 1357-1364.
GUIDE TO PRODUCING REPRODUCTIVE HEALTH SUBACCOUNTS WITHIN THE NATIONAL HEALTH ACCOUNTS FRAMEWORK by WHO, 2009; Accessed on March 11, 2018; Available at:
https://apps.who.int/iris/bitstream/handle/10665/44181/9789241598538_eng.pdf
What matters most to the health care consumer? Insights for health care providers from the Deloitte 2016 Consumer Priorities in Health Care Survey, accessed on July 11, 2019, available at URL:
https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-cx-survey-pov-provider-paper.pdf
Weber, J. L. (1983). The French natural patrimony accounts. Statistical journal of the United Nations economic commission for Europe, 1(4), 419-444.
Willekens, F. (2005). Towards a system of reproductive health accounts. Den Haag: Netherlands Interdisciplinary Demographic Institute.
World Health Organization. (2003). Guide to producing national health accounts: with special applications for low-income and middle-income countries.
World Health Organization. (2009). Guide to producing reproductive health subaccounts within the national health accounts framework.
Xu, K., Evans, D. B., Kawabata, K., Zeramdini, R., Klavus, J., & Murray, C. J. (2003). Household catastrophic health expenditure: a multicountry analysis. The lancet, 362(9378), 111-117.
Zeitlin, Govindaraj and Chen. (1994). Financing Reproductive and Sexual Health Services. In Gita Sen et al. (Eds.), Population Policies Reconsidered: Health Empowerment, and Rights. Boston: Harvard School of Public Health.
Zere, E., Walker, O., Kirigia, J., Zawaira, F., Magombo, F., & Kataika, E. (2010). Health financing in Malawi: evidence from national health accounts. BMC international health and human rights, 10(1), 27.

List of abbreviations in chronological order as it appears in the Document:

RHA REPRODUCTIVE HEALTH ACCOUNT

WHO WORLD HEALTH ORGANIZATION

SHA SYSTEM OF HEALTH ACCOUNTS

OECD ORGANIZATION FOR ECONOMIC COOPERATION AND DEVELOPMENT

NHA NATIONAL HEALTH ACCOUNTS

RH REPRODUCTIVE HEALTH

GDP GROSS DOMESTIC PRODUCT

USAID UNITED STATES AGENCY FOR INTERNATIONAL DEVELOPMENT

UNFPA UNITED NATIONS FUND FOR POPULATION ACTIVITIES

NIDI NETHERLANDS INTERDICSIPLINARY DEMOGRAPHY INSTITUTE

PMNCH PARTNERSHIP FOR MATERNAL, NEWBORN & CHILD HEALTH

IDB INTER-AMERICAN DEVELOPMENT BANK

MDG MILLENEUM DEVELOPMENT GOAL

ICPD INTERNATIONAL CONFERENCE ON POPULATION DEVELOPMENT

MTP MEDICAL TERMINATION OF PREGNANCY

IMR INFANT MORTALITY RATE

MMR MATERNAL MORTALITY RATE

RCH REPRODUCTIVE AND CHILD HEALTH

IMNCI INTEGRATED MANAGEMENT OF NEONATAL & CHILDHOOD ILLNESSES

FYP FIVE YEAR PLAN

TFR TOTAL FERTILITY RATE

HIV/AIDS HUMAN IMMUNODEFICIENCY VIRUS/ACQUIRED IMMUNO DEFECIENCY SYNDROME

SRH SEXUAL AND REPRODUCTIVE HEALTH

NGO NON-GOVERNMENT ORGANIZATION

RTI REPRODUCTIVE TRACT INFECTION

STI SEXUALLY TRANSMITTED INFECTION

FY FINANCIAL YEAR

OOPE OUT-OF-POCKET EXPENDITURE

NSSO NATIONAL STATISTICAL SURVEY OFFICE

MCH MOTHER AND CHILD HEALTH

NHATS NATIONAL HEALTH ACCOUNTS TECHNICAL SECRETARIAT

NHSRC NATIONAL HEALTH SYSTEMS RESOURCE CENTRE

GOI GOVERNMENT OF INDIA

GDDP GROSS DISTRICT DOMESTIC PRODUCT

GSDP GROSS STATE DOMESTIC PRODUCT

DALY DISABILITY ADJUSTED LIFE YEARS

CEDPA THE CENTRE FOR DEVELOPMENT AND POPULATION ACTIVITIES

SDG SUSTAINABLE DEVELOPMENT GOAL

UHC UNIVERSAL HEALTH COVERAGE

IIHMR INDIAN INSTITUTE OF HEALTH MANAGEMENT RESEARCH

DHA DISTRICT HEALTH ACCOUNT

ADB AMERICAN DEVELOPMENT BANK

APNHAN ASIA-PACIFIC NATIONAL HEALTH ACCOUNTS NETWORK

MOHFW MINISTRY OF HEALTH AND FAMILY WELFARE

HAPT HEALTH ACCOUNTS PRODUCTION TOOL

CHE CURRENT HEALTH EXPENDITURE

CMDR CENTRE OF MULTIDISCIPLINARY RESEARCH

NITI NATIONAL INSTITUTION FOR TRANSFORMING INDIA

AICPA AMERICAN INSTITUTE OF CERTIFIED PUBLIC ACCOUNTANTS

THE TOTAL HEALTH EXPENDITURE

SNA SYSTEM OF NATIONAL ACCOUNTS

FS FINANCIAL SOURCE

FA FINANCIAL AGENT

HP HEALTH PROVIDER

HF HEALTH FUNCTION

PHC PRIMARY HEALTH CENTRE

CHC COMMUNITY HEALTH CENTRE

SDH SUB-DISTRICT HOSPITAL

IPHS INDIAN PUBLIC HEALTH STANDARDS

ESIC EMPLOYEES STATE INSURANCE CORPORATION

CGHS CENTRAL GOVERNMENT HEALTH SCHEME

HH HOUSEHOLD

PCA PRIMARY CENSUS ABSTRACT

OPD OUT-PATIENT DEPARTMENT

TH TALUK HOSPITAL

DH DISTRICT HOSPITAL

UPHC URBAN PRIMARY HEALTH CENTRE

RPHC RURAL PRIMARY HEALTH CENTRE

SC SUB-CENTRE

DLHS DISTRICT LEVEL HEALTH SURVEY

IIPS INDIAN INSTITUTE OF POLICY STUDIES

DHFW DISTRICT HEALTH AND FAMILY WELFARE

MO MEDICAL OFFICER

AYUSH AYURVEDA YOGA AND NATUROPATHY UNANI SIDDHA HOMEOPATHY

BEMOC BASIC EMERGENCY OBSTETRIC CARE CENTRE

RPR RAPID PLASMA RATE

OT OPERATION THEATRE

OB-GYN OBSTETRIC-GYNAECOLOGY

FHA FEMALE HEALTH ASSISTANT

HA HEALTH ASSISTANT

MHA MALE HEALTH ASSISTANT

MD DOCTOR OF MEDICINE

MBBS BACHELOR OF MEDICINE AND BACHELOR OF SURGERY

ENT EAR NOSE THROAT

PSQ PATIENT SATISFACTION QUESTIONNAIRE

OSAT OVERALL SATISFACTION

ARS AROGYA RAKSHA SAMITI

RKS ROGI KALYAN SAMITI

List of Publication/Presentation:

1. Article name: 'Are Muslims Incurring Higher Out-of-Pocket Expenditures than Hindus in Reproductive Healthcare at Sub-District Levels in Karnataka?'
Authors: Rupa Sarkar, Dr Mahesh E
Journal: Indian Journal of Public Health Research and Development, Page 333-339, Pre-Publication Copy
Ahead of Print: Volume 10, No. 8, August, 2019 issue
Scopus IJPHRD Citation Score: 2015-0.02, SJR 2015-0.105, SNIP 2015-0.034, SJR 2018 0.11
2. Paper Presented in Hyderabad on 15/03/2018 in:
Conference organised by Indian Association for Research in National Income and Wealth (IARNIW) by CSO, India
Paper Title: 'A Study to Emphasize the Need to Construct Reproductive Health Accounts as Sub-Accounts of Health in Districts of India'